European Commission

Programme of exchanges in EU Outermost Regions (OR)

Compendium of good practices and solutions of climate change adaptation in the Outermost Regions of the EU

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1. Executive summary

The **EU Outermost Regions**, the most remote parts of the EU located in the Atlantic Ocean (Macaronesia), in the Caribbean Sea and South America, and in the South-West Indian Ocean, are particularly vulnerable to the adverse effects of climate change due to their geographical characteristics.

These regions face increasing challenges in preparing and adapting their societies to the threats posed by climate change, challenges which they share with their neighbouring third countries and territories. In this context, to support the Outermost Regions in addressing such challenges, the Directorate-General for Regional and Urban Policy of the European Commission launched a **programme to foster exchanges on climate change adaptation between the EU Outermost Regions and their neighbouring countries and territories**.

The EU seeks to provide tailored specific measures to support the Outermost Regions in line with the provisions of the Treaty on the Functioning of the EU (Article 349[1]). In this context, the European Commission adopted in 2022 a Communication[2] "Putting people first, securing sustainable and inclusive growth, unlocking the potential of the EU's Outermost Regions" to support these regions. This Communication notably underlines the Outermost Regions' vulnerability to climate change, which is also stressed in the EU Strategy on Adaptation to Climate Change[3] and in the Green Deal Communication[4].

The programme of exchanges on climate change adaptation between the EU Outermost Regions and with their neighbouring third countries therefore aimed to discuss common climate adaptation challenges and identify common good practices and solutions. The objective was to enhance cooperation within the same geographic basin and identify innovative initiatives that could be replicated in each basin and beyond.

The programme consisted of nine online workshops and one presential workshop, which brought together a wide range of stakeholders from the three basins: Caribbean-Amazonia, Macaronesia and South-West Indian Ocean. At these workshops, stakeholders (including academic and specialised institutions, regional governments and municipalities, project leaders and other key stakeholders) presented a number of projects and initiatives. By fostering such discussions, several outstanding practices and solutions have been identified and are presented in this compendium.

[1] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A12012E349

[2] European Commission (2022). Communication "Putting people first, securing sustainable and inclusive growth, unlocking the potential of the EU's Outermost Regions". https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022DC0198

[3] European Commission (2021). Communication "Forging a climate-resilient Europe – the new EU Strategy on Adaptation to Climate Change". https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2021:82:FIN

[4] European Commission (2019). Communication "The European Green Deal". https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52019DC0640

Definitions and scope of the exchange programme

In the EU Strategy on Adaptation to Climate Change and the EU Biodiversity Strategy, climate change adaptation is defined as “policies, practices and projects which can moderate damage, improve resilience and/or realise opportunities associated with the impacts of climate change at all levels of society”.

As such, the good practices and solutions included within the programme of exchanges were those which set out to **prevent** and **minimise** the impacts of climate change on people and the environment, as well as **address** its consequences. Further selection criteria were also developed to enable the appropriate identification of good practices and solutions within the programme of exchanges, such as innovativeness, replicability, transferability, effectiveness and cross-border cooperation.

An initial **mapping and analysis** of projects was conducted following these considerations and objectives. Afterwards, the workshops identified and discussed various projects, solutions and initiatives.

Aim and approach for developing a compendium of good practices and solutions

The present compendium aims to showcase good practices and solutions that have demonstrated key strengths, such as innovativeness, replicability, transferability, effectiveness and cross-border cooperation, and as such, provide a valuable input to Outermost Regions and neighbouring third countries.

The compendium of good practices and solutions of climate change adaptation is divided in **three parts**. **Part I** of the compendium provides a detailed context on the current environmental, social and economic constraints that Outermost Regions face, which compromise their resilience to climate change related effects. **Part 2** introduces **eleven solutions and practices** which are particularly relevant for the Outermost Regions. These solutions have been carefully selected to correspond and align with the challenges outlined in Part I. **Part 3** presents the conclusions of the compendium and of the overall programme.

Part I - Key challenges faced by Outermost Regions

This part provides a comprehensive overview of the barriers encountered by the Outermost Regions when implementing adaptation policies and solutions. These barriers, namely structural issues as well as the insufficient investment on infrastructure and local skills to address all the challenges faced, make Outermost Regions particularly vulnerable to the increasing severity and frequency of extreme weather events and rising sea levels, among other hazards. Furthermore, and given the exceptionally high biodiversity value in the Outermost Regions, there is a pressing need to equip them with applicable and innovative solutions.

The workshops focused on different themes which dealt with key challenges found in the Outermost Regions. Part I provides a comprehensive overview of the key challenges in respect to climate change in **six areas:** agriculture, biodiversity, extreme weather events, risk management in coastal areas, tourism and water management.

Main findings indicate that climate change impacts are threatening the resilience of the **agricultural** sector in the OR, as the rise in temperatures, the shifting of seasonal patterns and the reduced availability of water resources are aggravating agricultural yields and soil fertility. In addition, it has been observed that there is a need to support and build the capacity of relevant actors, including policymakers and farmers, through trainings and incentives, to implement adaptation solutions.

Biodiversity is also facing intense pressure from the greater vulnerability of Outermost Regions to climate change. Although nature-based tourism is increasing in popularity, inherent human activities related to tourism are exacerbating nature and ecosystems. In addition, marine biodiversity is also projected to keep decreasing as water temperatures rise and ocean acidification increases.

The Outermost Regions are also particularly exposed to **extreme weather events,** which have become increasingly frequent and intense over time due to climate change. Despite the increased awareness of climate change-related extreme weather risks, particularly for coastal areas[5], more specific actions are needed to address the risks to human safety and infrastructure. In this regard, the adaptation capacity varies depending on the economic sectors and the stakeholders' investment capacities.

Risk management in coastal areas has also become one of the most pressing challenges for Outermost Regions. These risks include greater incidence of coastal erosion, flooding, cyclones and intensified rainfall, which pose a major threat to the long-term sustainability of coastal communities, economies and natural and cultural heritage. Due to the increasing risks from serious disaster-related climate problems, coastal areas need to increase resilience and mitigation efforts.

The resilience of the Outermost Regions' economies also depends on the development of the **tourism sector,** which is under increasing pressure from climate change, particularly after the COVID-19 pandemic. Climate adaptation and resilience building measures are needed to ensure the long-term survival of small and medium enterprises (SMEs). In addition, trends show how nature-focused tourism is growing in popularity, and regions need to ensure that this emerging type of tourism does not have a negative impact on biodiversity and natural heritage.

Finally, **water management** is an area that faces growing challenges**.** Climate change impacts are exacerbating challenges related to water resources and water management and posing significant issues to the access and use of water. Therefore, it is essential that social, economic and demographic aspects are taken into account in implementing sustainable water management measures.

[5] As underlined by the Sixth Assessment Report of the Intergovernmental Panel on Climate Change https://www.ipcc.ch/report/ar6/wg2/

Part II - Solutions and practices

This part provides a collection of **eleven solutions and practices** that can be applicable and transferable to Outermost Regions and their neighbouring third countries. These solutions have been identified in alignment with the challenges and themes presented in Part I. Each solution is the product of extensive research, experience, regional expertise and lessons learned from a number of projects and initiatives by regional institutions which have devoted their efforts to shape an adaptation solution to various challenges. For each solution, a project example is presented, showing how the solution can be designed and implemented on the ground. More detailed information is presented in the Annex which includes a library of the projects.

The **eleven solutions and practices** identified are presented as follows:

Solution 1: Promotion of participatory and technological approaches in **agricultural** practices to optimise the use of natural resources.

The **promotion of participatory and technological approaches** has been particularly effective in **agricultural practices to optimise the use of natural resources.** By supporting farmers and agricultural workers in deploying technological innovations through participatory approaches, the optimisation of natural resources is increased. Participatory approaches involving the specific actors are fundamental as they can help to identify the needs of local communities and provide capacity and resources accordingly.

Solution 2: Transferability of measures at a local and regional scale in the **agricultural sector.**

For the Outermost Regions to effectively implement adaptation solutions, particularly in the agricultural sector, a sound understanding of regional specificities is considered particularly helpful. In this regard, the active promotion and implementation of transferable measures at regional scale enables the mobilisation of local actors and partners around a set of objectives and expectations. As such, understanding the regional policy framework of the region will enable an effective transferability of measures at a local scale, equipping farmers with adaptation solutions that are tailored to regional regulations. Projects exhibiting this solution have contributed towards the identification of favourable and limiting factors that can be replicated to other sectoral contexts across OR.

Solution 3: Promotion of biodiversity friendly **tourism** policies and regulations.

Biodiversity friendly tourism is important to mitigate the intense pressure on certain habitats and ecosystems of Outermost Regions, which hold a great biodiversity value. To ensure that biodiversity friendly tourism expands and becomes increasingly frequent in these regions, there is a need to raise awareness through policies and regulations. Projects using this solution have provided new resources and services focused on sustainability with innovative territorial marketing strategies that are based on the valorisation of the region and municipality’s natural and cultural heritage.

Solution 4: Promotion of nature-based climate adaptation solutions by local governance and society.

Encouraging and empowering regional and local actors is fundamental for their contribution on the ground in promoting biodiversity restoration and protection, as they are well placed to implement cost-effective nature-based solutions that foster ecosystem restoration and enhance climate resilience across various domains. To translate this solution into reality, actions have been undertaken, including networks where cross-cutting actions address a number of threats towards biodiversity.

Solution 5: Integration of accessible and tailored communication tools to raise awareness and educate local people.

To effectively communicate on the increasing importance of climate adaptation measures, it is fundamental to tailor the message in a way that is both accessible and relevant to the local population. Providing concrete examples that relate to their specific circumstances encourages individuals and communities to actively engage in the transition towards climate resilience. In addition, communication and messages designed for this purpose must take into account the needs and perspective of businesses, tourists and other key stakeholders in the region. When implementing this solution, projects have strengthened crisis preparedness through regional coordination and risk awareness strategies.

Solution 6: Introduction of integrated approaches for the adoption of climate adaptation and mitigation measures in territorial planning.

Territorial planning presents several opportunities for the mitigation of extreme weather events and the inclusion of adaptation measures to the everyday lives of communities. Integrated approaches can encompass both climate adaptation and mitigation, generating a compound benefit to the Outermost Regions. These integrated approaches are already being implemented in various Outermost Regions through a project that promotes energy autonomy and independence to increase overall resilience against climate change.

Solution 7: Setting up of networks and capacities for the exchange and improved access to practices, studies, information and data.

The establishment of networks covering several areas plays an essential role in the development of comprehensive solutions, as wide-reaching problems require intersectional responses across different disciplines and actors. In order to achieve this, regional platforms have been created, serving as repositories of information on practices, challenges, opportunities and trends. The active functioning of these platforms promote involvement and facilitate exchanges among stakeholders, enhancing data accessibility which can enable advancements such as more precise modelling for sea-level rise scenarios.

Solution 8: Development of the protection and restoration of ecosystems to contribute to the resilience of coastal areas.

For coastal areas to increase their resilience to the threats posed by climate change, the scientific community and technology need to step up and evolve to adapt existing tools and models to the constantly changing characteristic and nature of extreme weather events. Therefore, projects showcased in this compendium have developed digital models for the analysis of extreme weather events, which allow scientists to estimate and evaluate the current and future impact of these phenomena in Outermost Regions.

Solution 9: Promotion of cost-effective climate adaptation and resilience measures.

The promotion of climate adaptation and resilience measures must go hand in hand with the increasing growth and competitiveness of businesses, which are already accepting the adoption of such measures thanks to their cost-effectiveness. The active promotion of cost-effective climate adaptation and resilience measures encourages businesses to engage and contributes to achieving adaptation goals in local economies.

Solution 10: Implementation of resilient practices for climate change adaptation **in the tourism sector**

The sustainability of the tourism sector in Outermost Regions highly depends on the effects that climate change has over the stability of a particular region. In regions where tourism activities and infrastructure are being affected by climate change, good practices have emerged to develop local adaptation funds to finance innovative adaptation actions and design economic models to assess the impacts of climate change in the tourism sector.

Solution 11: Setting-up of networks and capacity to exchange and better access studies, information and data related to water management.

As previously stated, water management is becoming an increasing challenge that particularly impacts Outermost Regions due to their remote and (mostly) insular location. Due to their geographical isolation, access to freshwater is frequently limited and the management of available water resources is sensitive. To address this challenge, networks have been established to exchange and improve the accessibility of practices, information and data. In this way, the dissemination of practices, for example on the management and supply of drinkable water, is now possible.

Part III – Concluding remarks

Overall, from the programme of exchanges and the compendium of good practices and solutions of climate change adaptation in the Outermost Regions of the EU, six key interrelated conclusions and takeaways emerge:

1. The EU Outermost Regions have shown to be particularly exposed and vulnerable to climate change related hazards, owing mainly to their inherent insularity and remoteness.
2. Thanks to their unique assets - their biodiversity, oceans, geology and climate - the Outermost Regions also have the potential to be living laboratories for piloting innovative climate adaptation solutions.

3. Projects and initiatives across the Outermost Regions, and neighbouring third countries, are developing cutting-edge and collaborative climate adaptation solutions encompassing multiple critical sectors, providing an invaluable wealth of good practices that can also be transferred and implemented in different contexts in the Outermost Regions and in their neighbouring third countries.
4. The identified practices and solutions demonstrate how projects on climate change adaptation - most of which are EU-funded, as shown in Part 2 of the Compendium - are concretely supporting the implementation of the objectives of a number of EU strategies.
5. A broad variety of EU funding streams have supported the development and implementation of climate change adaptation practices and solutions in the EU Outermost Regions and their neighbouring countries and territories.
6. Looking ahead, the projects identified in this programme of exchanges and the compendium itself provide a sound benchmark on how to design and implement common practices and solutions.

2. Part 1: Introduction, context and key challenges

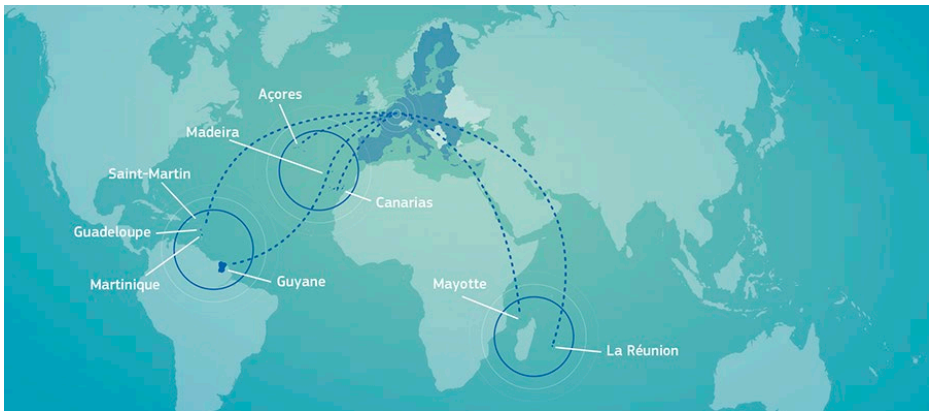
2.1. Context and objectives of the Directorate-General of Regional and Urban Policy General project / exchange programme and alignment with EU climate and OR objectives

2.1.1. Context

Outermost Regions and climate change

The **EU Outermost Regions** are located in three geographical sea basins. These are the **Macaronesian** basin (Canary Islands, Madeira and Azores), the **South-West Indian** basin (Mayotte and La Réunion) and the **Caribbean-Amazonian** basin (Saint-Martin, Guadeloupe, Martinique and French Guiana). These regions have been identified as particularly vulnerable to the impacts of climate change and face great challenges in preparing adequately their societies and economies for climate adaptation. This is principally due to their remoteness and (mostly) insularity, a high external dependency, with economies that are dependent on a limited number of products and predominately composed of SMEs and the compounding effect of various crises and economic vulnerabilities.

Figure 1. Overview of the EU Outermost Regions[6]



[6] https://ec.europa.eu/regional_policy/policy/themes/outermost-regions_en

In addition, low private investments combined with insufficient public investments in the development of integrated modelling of the impacts of climate change is limiting the implementation of large-scale public climate adaptation policies. Furthermore, the Outermost Regions (OR) suffer from structural issues and limited investments for the strengthening of local skills and the establishment of adequate infrastructure designed for climate adaptation and mitigation purposes. The OR also have unique assets, such as an exceptionally high biodiversity value, as well as specific natural heritages – attributes that underline the need to equip them to adapt to the impacts of climate change.

Severe impacts of climate change are already being observed in the Outermost Regions, including increased severity and frequency of extreme weather events, such as droughts and floods, changes to water and air temperatures, and rising sea levels. These impacts pose serious threats to the communities and ecosystems of the OR.

Due to their unique location, the Outermost Regions play a crucial role within the EU as strategic doors to the Atlantic, the Caribbean basin, South America, the Indian Ocean and Africa, and are pivotal in the development of exchanges with third countries. The Declaration of the EU-CELAC Summit 2023([7]) of 17-18 July 2023 made explicit reference to the Outermost Regions' climate change related vulnerability. The "New Agenda for Relations between the EU and Latin America and the Caribbean" ([8]) of 7 June 2023 recognises that the EU's presence in LAC – through Guadeloupe, Martinique, Saint Martin and French Guiana - is an asset for the partnership and presents as a key action to strengthen cooperation between LAC and EU Outermost Regions in areas of common interest. Such cooperation is even more necessary in the context of climate change, the impacts of which, although different from one region to another, are felt across all regions.

As solutions differ locally, successful adaptation is based not only on the assessment of risk, but also on the understanding of good practices and sustainable experiences that can be transferred regionally, nationally, and internationally. Moreover, exchanges of good practices and experiences play a crucial role in building joint actions and in developing harmonised decision-making processes at all levels of governance, for more effective public policies and greater involvement of the private sector. Finally, reducing knowledge gaps and vulnerabilities help increase the capacity for resilience and adaptation to climate change in the OR.

The Outermost Regions' specificities are taken into account in EU legislation and policies in accordance with the specific status granted to these regions under Article 349 of the Treaty on the Functioning of the EU (TFEU). In this context, in 2022, the European Commission adopted a Communication entitled "Putting people first, securing

([7]) https://www.consilium.europa.eu/en/press/press-releases/2023/07/18/declaration-of-the-eu-celac-summit-2023-17-18-july-2023/

([8]) https://ec.europa.eu/commission/presscorner/detail/en/ip_23_3045

sustainable and inclusive growth, unlocking the potential of the EU's Outermost Regions". This strategy underlines the ORs' particular vulnerability, which is also stressed in the EU Strategy on Adaptation to Climate Change of February 2021, as well as in the European Green Deal Communication of 2019. Furthermore, the EU Biodiversity Strategy highlights the importance of the Outermost Regions' biodiversity in stating that "particular focus will be placed on protecting and restoring the tropical and sub-tropical marine and terrestrial ecosystems in the EU's Outermost Regions given their exceptionally high biodiversity value".

The EU Strategy on Adaptation to Climate Change defines climate change adaptation as "policies, practices and projects which can moderate damage, improve resilience and/or realise opportunities associated with the impacts of climate change at all levels of society".[9] Based on this definition, good climate change adaptation practices and solutions can be deemed as those that fulfil one or more of the following requirements:

1) Practices and solutions that prevent the impacts of climate change on people, the planet and prosperity.
2) Practices and solutions that minimise the effects of climate change on people, the planet and prosperity.
3) Practices and solutions that address the consequences of climate change impacts on people, the planet and prosperity.[10]

Table 1 below provides a list of examples of climate change adaptation practices and solutions that have been more broadly applied across the globe and have as such been included in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).

Table 1 Examples of climate change adaptation practices and solutions based on the Intergovernmental Panel on Climate Change categorisation.[11]

Category		Example of climate change adaptation practices and solutions
Structural	Engineered and built environment	Sea walls and coastal protection structures; flood levees and culverts; water storage and pump storage; sewage works; improved drainage; beach nourishment; flood and cyclone shelters; building codes; storm and wastewater management; transport and road infrastructure adaptation; floating houses; adjusting power plants and electricity grids.
	Technological	New crop and animal varieties; genetic techniques; traditional technologies and methods; efficient irrigation; water saving technologies including rainwater harvesting; conservation agriculture; food storage and preservation facilities; hazard

[9] European Commission (2021). Impact Assessment Report accompanying the 2021 EU Climate Change Adaptation Strategy. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021SC0025&from=EN

[10] Based on the definition of climate change adaptation from 2020 European Commission paper "Adaptation to Climate Change: Blueprint for a new, more ambitious EU strategy". https://climate-adapt.eea.europa.eu/metadata/publications/adaptation-to-climate-change-blueprint-for-a-new-more-ambitious-eu-strategy

[11] https://forest.jrc.ec.europa.eu/en/activities/lulucf/ipcc-classifications/

Category		Example of climate change adaptation practices and solutions
		mapping and monitoring technology; early warning systems; building insulation; mechanical and passive cooling; renewable energy technologies; second-generation biofuels.
	Ecosystem-based	Ecological restoration, including wetland and floodplain conservation and restoration; increasing biological diversity; afforestation and reforestation; conservation and replanting of mangrove forest; bushfire reduction and prescribed fire; green infrastructure (e.g., shade trees, green roofs); controlling overfishing; fisheries co-management; assisted migration or managed translocation; ecological corridors; ex situ conservation and seed banks; community-based natural resource management (CBNRM); adaptive land use management.
	Services	Social safety nets and social protection; food banks and distribution of food surplus; municipal services including water and sanitation; vaccination programs, essential public health services including reproductive health services and enhanced emergency medical services; international trade.
Social	Educational	Awareness raising and integrating into education; gender equity in education; extension services; sharing local and traditional knowledge, including integrating into adaptation planning; participatory action research and social learning; community surveys; knowledge-sharing and learning platforms; international conferences and research networks; communication through media.
	Informational	Hazard and vulnerability mapping; early warning and response systems including health early warning systems; systematic monitoring and remote sensing; climate services including improved forecasts; downscaling climate scenarios; longitudinal data sets; integrating indigenous climate observations; community-based adaptation plans including community-driven slum upgrading and participatory scenario development.
	Behavioural	Accommodation; household preparation and evacuation planning; retreat and migration, which has its own implications for human health and human security; soil and water conservation; livelihood diversification; changing livestock and aquaculture practices; crop-switching; changing cropping practices, patterns, and planting dates; silvicultural options; reliance on social networks.
Institutional	Economic	Financial incentives including taxes and subsidies; insurance including index-based weather insurance schemes; catastrophe bonds; revolving funds; payments for ecosystem services; water tariffs; savings groups; microfinance; disaster contingency funds; cash transfers.
	Laws and regulations	Land zoning laws; building standards; easements; water regulations and agreements; laws to support disaster risk reduction; laws to encourage insurance purchasing; defining property rights and land tenure security; protected areas; marine protected areas; fishing quotas; patent pools and technology transfer.

Category		Example of climate change adaptation practices and solutions
	Government policies and programmes	National and regional adaptation plans including mainstreaming climate change; sub-national and local adaptation plans; urban upgrading programs; municipal water management programs; disaster planning and preparedness; city-level plans, district-level plans, sector plans, which may include integrated water resource management, landscape and watershed management, integrated coastal zone management, adaptive management, ecosystem-based management, sustainable forest management, fisheries management, and community-based adaptation.

Source: Adapted from Noble, I.R. et al. (2014). Adaptation needs and options. In: Climate Change 2014: Impacts, Adaptation and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap14_FINAL.pdf

In this context and in view of the growing need to strengthen climate adaptation in the EU's outermost regions, the European Commission's Directorate-General for Regional and Urban Policy (DG REGIO) responded to the specific commitment from the EU Adaptation Strategy to *"foster the exchange of best practices and solutions to common adaptation challenges among the Outermost Regions and with their neighbouring third countries"*. This programme of exchanges on climate change adaptation has resulted in this compendium, which presents the results and findings of these exchanges in the various geographical basins where the OR are located. Climate change is a global challenge, and therefore, the replicability of the solutions presented is not limited to those geographic spaces.

2.1.2. Objectives of the compendium

While the EU Outermost Regions are facing great challenges in addressing the myriad negative impacts of climate change, they also have opportunities to strengthen their own climate change adaptation plans by exchanging best practices and solutions with their neighbouring third countries. Due to their unique assets, the Outermost Regions have the potential to act as laboratories for innovative solutions in biodiversity conservation and restoration, the development of resilience to extreme weather events and risk management, green transition initiatives in agriculture and tourism, and renewable energy technologies implementation, and more.

The present compendium provides a compilation of good practices and solutions of climate change adaptation. The compendium provides a tool for the promotion of good practices for climate change adaptation, to contribute to the structural capacities, decision making and regional adaptation strategies of the Outermost Regions and their neighbouring third countries.

Building upon existing European initiatives, the programme of exchanges of good practices brought together existing experiences, expertise and projects, alongside regional strategies and innovative, community and nature-based approaches to compile a set of well-informed adaptation solutions for the OR and their neighbouring third

countries. These approaches and initiatives include an analysis of existing climate adaptation initiatives in the three geographical basins and the organisation of a series of workshops held across them in which OR regional authorities, project representatives and other key stakeholders, including from neighbouring third countries, presented and discussed their experiences and work on climate adaptation.

The nine workshops and final event that took place across the geographical sea basins of the OR allowed to reinforce and validate the information sourced in the analysis undertaken, with a diverse range of expert voices and local perspectives covering a selection of critical themes and sectors at the forefront of climate adaptation efforts. Given that the climate crisis is heterogeneous in its various impacts and that there is no single solution to address these, the diversity of experiences and inputs are essential to ensure the replicability of the good practices and solutions. In this way, the compendium can provide thematic good practices and solutions that are innovative, impactful and transferable to several climate adaptation contexts across the different sea basins, their neighbouring third countries and worldwide.

2.1.3. Overview of workshops

Nine virtual workshops were conducted, inviting participants from across the three sea basins where the Outermost Regions are located, three per sea basin, namely Caribbean-Amazonia, Macaronesia and South-West Indian Ocean. The themes of the workshops were selected based on an analysis of relevant initiatives that identified the topics most pressing in each sea basin in relation to climate adaptation needs. The themes and dates of the nine workshops are presented in Table 2.

Table 2. The nine online workshops conducted in the Outermost Regions

Sea basin	Workshop number	Workshop theme	Date
Caribbean-Amazonia	1st Workshop in the Caribbean-Amazonia Basin	Climate change adaptation to extreme weather events and coastal resilience	Thursday 15th September 2022
	2nd workshop in the Caribbean-Amazon Basin	Resilient agricultural practices for climate change adaptation	Thursday 10th November 2022
	3rd Workshop in the Caribbean-Amazonia Basin	Solutions to protect and preserve biodiversity from the impacts of climate change	Thursday 30th March 2023
South-West Indian Ocean	1st Workshop in the South-West Indian Ocean Basin	Solutions for adaptable and resilient agricultural systems and food security	Wednesday 5th October 2022

	2nd Workshop of the South-West Indian Ocean Basin	Climate adaptation and risk management in coastal areas	Thursday 6th October 2022
	3rd Workshop in the South-West Indian Ocean Basin	Adaptation of water management and protection of water resources from the effects of climate change	Thursday 20th April 2023
Macaronesia	1st Workshop in the Macaronesia Basin	Resilience towards extreme weather changes – Temperature and precipitation changes; Extreme weather events and human safety	Wednesday 26th October 2022
	2nd Workshop in the Macaronesia Basin	Risks and opportunities from climate change and climate adaptation for the tourism sector	Thursday 27th October 2022
	3rd Workshop in the Macaronesia Basin	Solutions and mitigation measures regarding biodiversity loss caused by climate change	Wednesday 22nd March 2023

The common objective of the nine workshops was to present and discuss initiatives and approaches that could be considered as good practices. To this end, preparatory work was carried out that included discussions with the services of the European Commission, and with the relevant project representatives and stakeholders, who were then invited to participate in the workshops.

The participants of the workshops encompassed a wide range of key stakeholders, including members of the Outermost Regions Working Group, national experts and stakeholders from France, Spain and Portugal, members of regional administrations, technical experts, civil society representatives and representatives of third countries. This range of participants ensured a strong diversity of perspectives and insights from the critical actors in the fields of the selected workshop themes.

The workshops were conducted online by using Zoom, which helped foster the use of interactive tools that led to a high level of participation and engagement from participants. The workshops followed a common structure, focusing on the presentation of successful climate adaptation projects, followed by broader discussions, and brainstorming on various transversal topics.

The proceedings and outputs of the workshops fed directly into the development of the compendium of good practices and solutions. The methodology of selection of the projects is described in Annex I.

The **final event of the programme of exchanges** was held on 13 June 2023 in the Canary Islands, the region hosting the Presidency of the Conference of Presidents of the Outermost Regions from November 2022 to November 2023. The event was held in a hybrid format. This event served to present and conclude the exchanges carried out

during the previous workshops across the three geographical basins. This event discussed the main outcomes of the nine virtual workshops and showcased flagship projects in the Outermost Regions putting forward concrete solutions for climate adaptation. Participants debated on the projects' key activities and findings.

2.1.4. Overview of challenges in climate change adaptation across the sea basins of the Outermost Regions

The themes of the workshops address key challenges in various sectors of the Outermost Regions. These themes were identified through interviews with local stakeholders and mapping initiatives in the sea basins. Understanding these challenges and their impact on the ecosystems is crucial for designing increasingly effective solutions.

Understanding what the most pertinent challenges are and how they pose a substantial threat to the Outermost Regions' ecosystems is crucial to understand how solutions are designed and implemented. Hence, this section aims to provide a comprehensive understanding of the common challenges in **six fundamental areas in the Outermost Regions**: agriculture, biodiversity, extreme weather events, risk management in coastal areas, tourism and water management.

2.1.4.1. Challenges to agriculture

The agricultural sector is a key economic sector for most of the Outermost Regions and is being strongly affected by climate change. In the Caribbean-Amazonia basin, rises in temperatures, shifting seasonal patterns, reduced availability of water resources and extreme weather events are directly threatening agricultural yields and soil fertility. These vulnerabilities are being further compounded by recent international and geopolitical crises (namely the COVID-19 pandemic and the Russian invasion of Ukraine), further destabilising food supplies and security in the sea basin.

Strengthening the resilience of agriculture and land use in the Caribbean-Amazonia basin is therefore critical to ensure the futureproofing of agriculture, maintain the competitiveness of the sector, safeguard the value added and employment in the territories and reduce their external dependency on agri-food imports.

In the South-West Indian Ocean basin, agriculture is also of great economic significance, with nearly a third of households in Mayotte working in the sector, while sugar cane production remains Réunion's strongest agro-economic pillar. The greater intensity and severity of extreme weather events resulting from climate change are therefore also putting increasing pressures on the basin's important agricultural sector, with cyclones and intensified rainfall causing flooding and soil erosion that reduce crop yields and livestock productivity. Additionally, shifts in temperature can facilitate the establishment and spread of invasive pest species.

Cluster of bananas in Martinique. © Creative Commons

The strong dependence of the two basins' economies on their agricultural sectors makes the development of corresponding adaptive responses particularly important. In this vein, the promotion of sustainable farming practices and the exchange of good practices represent important actions to foster diversification, agricultural modernisation and increased food autonomy of the region. As the impacts of environmental change translate into socio-economic and health problems, it is essential that both regions develop resilient and ecosystem-based farming methods.

In the Macaronesian basin, the economies of the Canary Islands, Madeira and the Azores do not rely as heavily on the agricultural sector as the French OR. The sector nevertheless does represent an important part of the regional economies and threats posed by climate change (e.g., crop quality) are real. For instance, in the Canary Islands, during the 2023 summer, farmers have lost 60%[12] of their potato harvest (one of the most important in the archipelago, since it serves as an essential ingredient within the Canarian gastronomy) and 80% of cereal harvest. The region has gone through a period of sustained draughts from the beginning of the year, which is affecting the overall vegetative cycle and the quality of the final product. Given that the lack of precipitations has become an increasing issue for these regions, the implementation of climate change adaptation solutions and practices can contribute towards the mitigation of this situation.

[12] The Farmers Association of the Canary Islands (ASAGA) reported these statistics in June, 2023.

2.1.4.2. Challenges to biodiversity

The Outermost Regions are home to a rich and unique biodiversity, as typically associated in regions characterised by islands with insularity and limited connectivity. The regions' diverse array of terrestrial and marine species and ecosystems, many of which cannot be found anywhere else on the planet, are exceptionally valuable ecologically, economically and culturally. Indeed, the EU Biodiversity Strategy for 2030 recognises this value of the Outermost Regions' biodiversity and stresses the need to protect and restore their vital natural heritage.

In addition to the unique and rich biodiversity of the Outermost Regions being of crucial biological significance, it also represents vital economic, cultural and social value for the regions and their communities. Essential ecosystem services include the provision of commercial fish stocks, while habitats like beaches, corals and dunes are prime spots for recreational activities and prevent coastal flooding as well. Marine and terrestrial biodiversity is also highly valuable in sequestration of carbon, and therefore for climate mitigation. Healthy ecosystems are also key for dealing with present and future climatic conditions.

The marked effects of climate change on the Outermost Regions are posing particular threats to biodiversity by disrupting the niche ecological processes that have evolved from these regions' unique attributes and specificities. Increases in temperature and decreases in precipitation also raise the likelihood of wildfires, and ocean acidification from greater levels of atmospheric carbon dioxide in combination with increased risk of ocean heatwaves poses risks of coral bleaching to the black coral reefs, while rising sea levels threaten beaches and dunes across the islands. Shifting ranges of certain species resulting from climate change will have adverse effects on carefully balanced ecosystems and food chains, including facilitating the introduction and dispersal of invasive species. These myriad risks to nature, which, alongside other pressures, as on agriculture and tourism, threaten to compound and exacerbate biodiversity loss. This is why biodiversity protection, and the promotion of nature-based solutions are crucial elements of the EU Strategy on Adaptation to Climate Change.

The three archipelagos that make up the Macaronesia basin are home to a rich diversity of habitats, from arid deserts in the Canary Islands, to humid laurel forests in the Azores and Madeira, to high-altitude zones in the Canary Islands, and the black coral reefs also of the Canary Islands and the Azores, with many more besides. From such richness in habitats rises a similarly great richness of biodiversity and ecosystems, including many species of animals and plants that cannot be found anywhere else. Climate change-induced rises in temperature (by 2.5Cº - 4Cº in the Canary Islands and by around 2.5Cº in Azores and Madeira before 2100) and shifts in precipitation levels will disrupt these ecosystems, including the laurel forests that persist in Macaronesia due to unique climatic conditions.

Laurel forest in Fanal, Madeira. The Laurisilva of Madeira conserves the largest surviving area of primary laurel forest.[13].

The biodiversity of the Caribbean-Amazonia basin also faces many challenges, with growing climate change hazards alongside invasive alien species, urbanisation and pressures on forest resources. For example, in Guadeloupe, a reduction of living coral coverage, with a degradation of reefs and associated ecological, social and economic consequences, are being observed.

These repercussions are projected to intensify with the rise in water temperatures, increased ocean acidification and greater frequency of extreme weather events. Martinique faces similar issues with its marine biodiversity, with a greater propensity of cyclones incurring a loss of mangrove forests and the loss of the humid bioclimate reducing the size of upland forests. Meanwhile, French Guiana is home to a wealth of biodiversity, including around 5,500 plant species and 1,400 terrestrial animal species. However, increasing air temperatures are damaging its equatorial forest habitats and disrupting the reproductive cycles of many species. Finally, the Dominican Republic is confronted with extreme weather events including floods, mudslides and increased aridity, which are endangering the rich variety of bird, mammal and amphibian species on the island. It is therefore crucial for the sea basin as a whole to develop sustainable approaches to safeguard its valuable biodiversity.

The South-West Indian Ocean basin is particularly vulnerable to an increase in cyclones and intensified rainfall, with greater erosion and flooding as a result. The coral reefs and

[13] Unesco's World Heritage Convention

associated marine biodiversity of Mayotte and La Réunion are being affected by these environmental changes and thus require the development and implementation of protection policies, ensuring greater resilience in the face of environmental threats.

In addition, the huge increase in the abundance of Sargassum in the Caribbean since 2011 poses a great threat to the coastal life and local ecosystems of the French outermost regions located in this basin, as well as to human health. The increase of sargassum blooms is a result of many factors, climate change being one of the defining factors. The climate change factor includes ocean acidification and warming, as well as extreme weather events and winds which affect currents carrying these massive blobs of the algae into waters surrounding the Caribbean. It is clear that this sargassum issue is largely a reality because of the climate crisis. Along with its devastating effects on coastal tourism and fishing activities, sargassum has important ecological impacts. Large floating mats of sargassum block sunlight, which is essential for the survival of underwater grasses that stabilise the seafloor and provide food and shelter for many species of fish. Moreover, coral reefs also require sunlight and clear water to survive, therefore the increase of sargassum is an additional threat for the already highly vulnerable corals.

2.1.4.3. Extreme weather events

The EU Outermost regions are particularly exposed to extreme weather events, which are increasing in frequency and severity as a result of climate change. Furthermore, the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)[14] on adaptation states that climate change is predicted to have increasingly severe impacts on coastal areas, including rises in sea levels, flooding, and storms. There will therefore be greater risks and pressures placed on cities, other settlements, and key infrastructure in the coastline areas of the Outermost Regions. Coastal erosion and flooding can pose serious dangers to human safety and infrastructure, as well as to the ecosystems and the various cultural, environmental, economic and social value they hold. The growing urbanisation and intensification of human activities in these coastal areas are likely to exacerbate these negative climate change impacts.

In this regard, the coastal areas of the Caribbean-Amazonia basin are facing various challenges due to their geographical location, with impacts relating to sea level rises, heavy precipitation events and tropical cyclones. Saint Martin in particular is highly exposed to extreme weather events, and major challenges remain in the reconstruction of the island following the damage inflicted by Hurricane Irma in 2017.

[14] https://www.ipcc.ch/report/ar6/wg2/

Aftermath of Hurricane Irma on Saint Martin. © Lionel Chamoiseau

The three archipelagos covered by the Macaronesia basin are set to be particularly affected by rises in temperature and to a greater extent than the global average: it is estimated that the average temperature could rise by 2.5Cº - 4Cº in the Canary Islands and by around 2.5Cº in Azores and Madeira before 2100. Meanwhile precipitation levels are predicted to shift, with a decrease of 15% in the Canary Islands and of 30% in Madeira. In the Azores, precipitation is estimated to increase in intensity and concentration during the winter and decrease during the summer. These changes in the pattern of temperature and precipitation in the Macaronesia basin pose threats in the form of increased incidence of extreme weather events. Extreme heatwaves, droughts, hurricanes and persistent haze could affect the Canary Islands, while tropical storms, hurricanes, high-intensity rainfall and extreme winds could afflict the Azores with greater frequency. Such events pose significant risks to the infrastructure, human safety, and tourism sectors of the islands.

2.1.4.4. Risk management in coastal areas

The Outermost Regions are experiencing an increasingly greater level of risk from serious disaster-related climate problems. These risks include greater incidence of coastal erosion, flooding, cyclones and intensified rainfall, with negative associated impacts to the local communities, economies and natural and cultural heritage. To secure greater resilience in the face of these growing risks, developing modelling tools and monitoring practices for natural hazards are a key priority, as are the raising of awareness and dissemination of relevant information for the empowerment of local decision-makers and populations to encourage their active engagement. Acting quickly in response to extreme weather events is paramount. Mobilising resources and people

in a timely and coordinated manner can also significantly reduce the damage caused, thus risk management is crucial to ensuring this timeliness.

Floods and mudslides in Funchal, Madeira. © Magnus Manske

2.1.4.5. Challenges to tourism

Tourism is a sector of high importance in most Outermost Regions, being of particular pertinence to the Macaronesia basin, both in terms of GDP and employment. Climate change impacts also place increased pressures on this critical sector, with important implications for regional economies. Beach erosion can have negative consequences for regions where sun and beach tourism are a significant touristic draw. Although the unique marine and terrestrial biodiversity of the regions also hold strong appeal for increasingly popular nature-focused tourism, climate change is having myriad disruptive effects on these biodiversity-rich ecosystems, such as, for example, the loss of the climate niche Laurisilva forests in Madeira, while tourism itself can further exacerbate pressures on species and habitats. Climate adaptation measures for this sector are therefore crucial to ensure their continued competitiveness, while efforts are also required to preserve the natural and cultural heritage of the regions that hold significant touristic value and promote sustainable tourist activities.

2.1.4.6. Challenges in water management

The infrastructure, typology and climate of the South-West Indian sea basin means that it faces particular challenges in its water supply, with an already weak water management system under even greater strain from the effects and hazards of climate change.

La Réunion has an unbalanced water supply, with most agricultural land and 80% of the island's population located in the drier western part of the island, while 70% of the island's annual rainfall occurs in the eastern part. Mayotte, which is particularly dependent of

rainwater, is currently facing a major water crisis due to a severe draught that has left water reserves empty. This has led to an unravelling crisis that has left the population without access to drinking water. Water shortages are also caused by low groundwater reserves, deforestation, and urbanisation. Insufficient water resources make water an expensive commodity. Mayotte is currently grappling with severe water shortages, with residents having access to tap water for only two out of three days on average since September 2023. The crisis, the worst since late 1990s, has forced local authorities to implement water-saving measures. Even when residents have access to tap water, the water quality has deteriorated, leading to health issues for some residents who now rely on bottled water. Adding to this catastrophic social crisis, the price of water bottles has spiked, with an average cost of €4-€5 for a six-litre packet (which can reach up to €12 in some places), compared to €2 in mainland France, and considering that Mayotte is the poorest department in France.

Water management will become one of the main challenges emerging from climate change. © UNDP

3. Part 2: Collection of good practices and solutions for climate adaptation

Part 2 presents a comprehensive collection and detailed insight into proven solutions and best practices for climate change adaptation in the Outermost Regions. These practices have effectively addressed common challenges described and developed in Part 1.

To include appropriate practices and solutions in the workshops of the programme of exchanges between the OR and neighbouring third countries, a careful selection and mapping, which also involved consultations with regional experts, was carried out. The selected projects have demonstrated key strengths such innovativeness, replicability, transferability, effectiveness and cross-border cooperation, making them valuable for in-depth analysis and applicable to different Outermost Regions. The subsequent selection of the practices and solutions which have been included in the main body of this compendium was guided by a number of considerations. For example, to ensure geographical balance, the selection covers all three sea basins, and several types of initiatives involving a broad range of key actors and stakeholders were considered. The value provided by several projects as good practices for this purpose was validated by their inclusion in the workshops and the resulting discussions that took place. For a detailed methodological procedure, please refer to Annex I. It is also important to note that a number of these projects have successfully been carried out and are hence concluded. Other projects selected are currently in the implementation stage but are nevertheless already demonstrating innovative and effective solutions and practices which are worth sharing within this compendium.

More specifically, below, **eleven outstanding solutions and practices** have been identified per theme (aligned accordingly with the challenges presented in Part I), namely **agriculture**, **biodiversity**, **extreme weather events**, **risk management and coastal areas**, **tourism and water management**. Each solution is contextualised and described as to suit the reality of Outermost Regions, providing a project summary box in which the essential information on the project is included. To find further and more detailed information on a particular project, refer to Annex II, where a full, elaborated version of project fiches can be found. Furthermore, within Annex II, there are additional project fiches of selected practices and solutions which were presented during the workshops and final event.

3.1.1. Agriculture

3.1.1.1. Solution 1: Promote participatory and technological approaches in agricultural exchanges and practices to optimise use of natural resources

Farmers and agricultural workers can be involved so that they are not only beneficiaries but also key actors in the ecological transition. To this end, they could be helped to deploy technological innovations to optimise natural resources, while achieving climate

resilience and sustainability goals. Participatory processes involving the specific stakeholders concerned are crucial and can help to identify the needs of local communities and increase their commitment, as in the case of raising farmers' awareness of the need to build climate-resilient agricultural systems.

In order to facilitate the environmental transition and combat the overexploitation of natural resources, it has been proven effective to involve policy makers and economic operators. Additionally, successful agricultural strategies are those which have been tailored to regional specificities, taking into account local political priorities and the particular needs and requirements of farmers. It has also been shown to be effective for local administrations to work on the identification and growing of suitably resistant crops, conservative agriculture to restore soil fertility, integration of livestock and agriculture at territorial level, as well as nature-based solutions. Financial and technical support is also a sound approach to help smallholder farmers and protect them against damage to their agricultural activities and provide them with the tools to implement sustainable farming solutions.

These guidelines are already present in a handful of projects across Outermost Regions. An exemplary representation of participatory and technological approaches implemented in agricultural exchanges is the **CAMBIONET project**. This project involves the cooperation of a broad range of actors from different countries and regions in the Caribbean-Amazonia basin, including Outermost Regions such as Martinique, Guadeloupe and French Guiana. The project aims to accelerate the bio-economic transition and the agri-food and economic performance of the basin through the following specific measures:

- Development of an innovative pilot system via an inter-regional network of connected innovation platforms (Living Labs) and start-ups.
- Establishment of an inter-regional network for dissemination and agricultural advice.
- Introducing a common digital library for the dissemination of knowledge, good practices, and training/learning modules.
- Providing policymakers with decision-making tools (such as Big Data analysis and the diagnosis of databases and inventories on bio-resources) to strengthen the effectiveness of agricultural public policies adapted to the intrinsic characteristics to the region.

Through a successful and effective transferability process among Outermost Regions, this project will help to promote the agroecological transition while strengthening the agricultural sector and maintaining its resilience to climate change challenges.

One of the first CAMBIONET stakeholder engagement seminars took place in July 2022 at Saint-Lucia. © CAMBIONET

CAMBIONET: Caribbean and Amazonian Bioeconomic Network (see Annex II, 5.2.1.2, Initiative 1)

Facilitates knowledge exchange through a multi-level network of interregional agricultural actors and aimed to promote efficient agricultural and food models through the research of innovative techniques in agroecology, agro-processing and bioeconomy.

The project operates in a wide geographical scope, including three Outermost Regions: Guadeloupe, Martinique, French Guiana. It is funded under the European Regional Development Fund (ERDF) and it is led by a multidisciplinary consortium, including universities, R&D institutions, agricultural chambers and relevant research institutions.

3.1.1.2. Solution 2: Transferability at a local and regional scale in agriculture

Due to the singularity of the agricultural sector in each of the different Outermost Regions, tailoring adaptation solutions to regional specificities is particularly helpful for the agricultural sector. In this regard the active promotion and implementation of transferability measures at regional scale enables the mobilisation of local actors and partners around a set of objectives and expectations by successfully fostering cooperation and collaboration, future participation in more intricate and ambitious programmes is encouraged within the local population.

To further promote transferability at a regional scale, it is fundamental to assess the conditions that foster a successful design and implementation of Climate Change policies. In order to do so, the analysis of concepts proposed to tackle adaptation issues

in agriculture (such as Agro-ecology, Climate Smart Agriculture and Ecosystem-Based Adaptation) is vital, as they provide the groundwork for developing sustainable solutions and policies that will drive future progress in addressing climate change impacts.

Relocation of crops after hurricane Irma in Guadeloupe, France. © ARTIMIX Project

As such, understanding the regional policy framework will enable an effective transferability of measures at a local scale, equipping farmers with adaptation solutions that are tailored to regional regulations. Projects exhibiting this solution have contributed towards the identification of favourable and limiting factors that can be replicated to other sectoral contexts across OR. More specifically, innovative and socio-technical networks have recently emerged in regions like Guadeloupe to provide individual support to farmers, contributing to the ongoing transformation of agricultural models in territories. In Guadeloupe, collective action within the agricultural sector has proved to enable better dialogue with local authorities, which further promotes the implementation of climate change adaptation policies.

Thanks to the efforts and presence of the **ARTIMIX** project in the region, the integration of adaptation policies into the local political agenda was possible. This project, which is funded by the French National Research Agency, has fostered the implementation of adaptation policies in the agricultural sector at local level according to the intrinsic specificities of each region and the needs of farmers. Results from the project have a solid transferrable value, as they may guide towards the identification of favourable and limiting factors that can be transposed to other sectorial contexts to achieve similar socioeconomic and environmental results in other Outermost Regions.

ARTIMIX (See Annex II, 5.2.1.2, Initiative 3)
The project achieved the integration of adaptation policies into the political agenda at the regional level and fostered the implementation of these policies at the local level according to the specificities of each region and the needs of farmers.
The geographical scope of this project is Guadeloupe. This project is funded under l'Agence Nationale de la Recherche and it is led by a complementary consortium with an important regional expertise, including the Centre international de coopération en recherche agronomique pour le développement (CIRAD), l'Institut National de Recherche Agronomique (INRA), l'Institut Technique Tropical (IT2), l'Université des Antilles (UA), l'Université national de Brasilia (UnB) et le Centre International d'Agriculture Tropicale (CIAT).

3.1.2. Biodiversity

3.1.2.1. Solution 3: Promotion of biodiversity friendly tourism policies and regulations

Biodiversity is especially rich and unique in the Outermost Regions, but it also faces intense pressure from the greater vulnerability of these regions to climate change, and from tourism. Nature-focused tourism is increasing in popularity, but it needs careful planning to reduce this exacerbation of pressure. “Biodiversity friendly” tourism can be one way to benefit both local economies and natural ecosystems, acting to better raise awareness on how to protect biodiversity from climate change issues.

To ensure that these messages are properly disseminated among the population, joint regional awareness campaigns on how biodiversity friendly tourism policies and regulations can favour an increasing resilience is highly recommended.

An example of how these actions can be channelled through the engagement of an NGO, in a local municipality of a relatively small size, resources and means, is the **ECOS MACHICO project.** In essence, this Madeiran project combined knowledge and innovation in response to demands for territorial sustainability, for “Ecosystem Sites”, sites of geological, biological, historical, and cultural interest, and therefore of touristic interest. This was done via a monitoring system to provide for official territorial planning instruments, allowing for a greater understanding of impacts, adaptation, and mitigation measures to be adopted in the decision-making process.

Pico do Facho is one of the identified “Ecosystem Sites” of the project. © Ecos Machico

The project resulted in the provision of new resources and services focused on sustainability, implementing a territorial marketing strategy based on the valorisation of the municipality’s natural and cultural heritage. This helped reinforce local economies with the availability of sustainably resourced services and the valorisation of the green economy. In addition, it contributed to the development of a territorial monitoring system, the raising of responsibility and awareness to promote environmentally friendly

behaviours and a system of certification for the Ecosystem Sites. These practices can provide a source of inspiration to different Outermost Regions, especially during the process of engagement of similar sized and equipped municipalities.

ECOS MACHICO – Desenvolvimento e Sustentabilidade Territorial/Territorial Development and Sustainability (See Annex II, 5.4.1.2, Initiative 3)
The project has communication as one of its core activities, particularly in communicating to young people in schools to engage them in the project, through the development of "Ecosites" and a dedicated information centre to educate both locals and tourists on the importance of sustainable tourism and to protect local natural heritage
The geographical scope of the project is the island of Madeira, Portugal. It is co-financed by the European Agricultural Fund for Rural Development (EAFRD) and formally led by the municipality of Machico and the Insular Association of Geography.

3.1.2.2. Solution 4: Promotion of nature-based climate adaptation solutions designed and implement by local actors

The Natural Reserve of Caldeira of Faial is one of the protected areas under the project. © LIFE IP Azores Natura

Biodiversity loss has been receiving increased attention from policymakers at regional, national, European and global level, in particular on how it interacts with climate change. Such loss is impacting on how governments and administrations at all levels engage in the processes of protecting biodiversity.

Regional and local actors have particular influence on the ground when it comes to promoting biodiversity restoration and protection. Their further involvement will equip them to deploy cost-effective nature-based solutions that contribute to both ecosystem restoration and climate resilience in different fields, for example green spaces promoting cooling in urban areas or mangrove restoration buffering against flooding.

Several projects across regions have launched actions in cooperation with regional authorities to improve the conservation status of habitats and species through habitat improvement, tackling invasive species, developing technical capacities and raising awareness. This set of actions are of direct relevance to climate changing planning of public policies, as it favours increasing resilience of the targeted habitats and species to climate change risks.

Promoting nature-based climate adaptation solutions can also provide important support in reducing the impact of natural and health disasters, as well as the foreseeable effects of climate change. In order to meet such objectives, these solutions can contribute to offer capacity building to respond to emergencies and reparation of disasters, which can be done through the development of local plans and strategies, simulation exercises and trainings.

One long-standing EU initiative that encompasses these solutions is **Natura 2000**, a network of core breeding and resting sites for rare and endangered species, along with rare natural habitat types that deserve special protection.

Within this network, the **Life IP Azores Natura** project aims to facilitate the implementation of the regional Prioritised Framework Programme through habitat improvement works, control and eradication activities, as well as raising awareness of local population and relevant stakeholders. The project has demonstrated that it is possible to create a holistic and ambitious framework of action, deploying multiple activities that address a number of matters in biodiversity, including cross-cutting actions addressing water and ocean legislation, as well as regional programmes on climate change.

Life IP Azores Natura (See Annex II 5.4.1.2, Initiative 7)
The project acts to raise the awareness of local population, stakeholders and agents to the conservation values of the Natura 2000 network and its value as an instrument in sustainable development.
The geographical scope of the project is the archipelago of the Azores, Portugal. It is funded under the LIFE programme, and it is led by the Regional Secretariat for the Environment and Climate Change (SRAAC) of Azores Government.

3.1.3. Extreme weather events

3.1.3.1. Solution 5: Integrate accessible and tailored communication tools to raise awareness and educate local people

Communication on climate issues and the need for climate adaptation measures is most effective when tailored to address local populations in a way that is accessible and meaningful to them. Such an objective can be facilitated through the provision of concrete examples specific to their areas. These practices and examples will help to motivate individuals to participate in a more inclusive transition to climate resilience by implicating local people and ensuring their voices are heard. Tailored communication across multiple levels is also important, for example concerning tourists, businesses and other key stakeholders. This will help secure social and economic baselines of these regions and engender social acceptance of climate adaptation measures.

During the exchanges, several initiatives and projects targeting local people to raise awareness on climate change were presented. The **READY TOGETHER** project has been one of the most relevant examples of how to embrace an integrated approach to crisis preparedness to effectively meet the basic needs of the Caribbean population affected by natural hazards and climate change. In order to reinforce such preparedness, the project has contributed towards the strengthening of regional coordination and disaster management mechanisms as well as promoting risk awareness among the youth and regional advocacy through a joint regional awareness campaign on major risks and adaptation to climate change. In order to strengthen such mechanisms, the project carries out a number of bolstering activities, such as the promotion of legislative and legal frameworks for risk reduction, training of Caribbean emergency crews and the reinforcement of the operational capacity of National Red Cross Societies.

Security and health guidelines on how to prepare for a hurricane is one of the various risk awareness campaigns disseminated during the development of the project. © French Red Cross

As lack of awareness is often a challenge encountered by many Outermost Regions, this project serves as a helpful foundation on how to create an educational framework in which the population can feel embraced and supported, while increasing the overall response capacity against natural hazards in the region.

READY TOGETHER (**See Annex II, 5.2.1.1, Initiative 2)**
The project used video portraits to inspire citizens and raise the awareness of risk prevention and disaster preparedness.
The geographical scope of the project encompasses Guadeloupe and Martinique. It is funded under the European Regional Development Fund (INTERREG) and it is led by the Regional Intervention Platform for the Americas and the Caribbean of the French Red Cross, in partnership with the Regional Council of Guadeloupe and the Agence Française de Développement (AFD).

3.1.3.2. Solution 6: Introduction of integrated approaches for the adoption of climate adaptation and mitigation measures in territorial planning

Territorial planning is increasingly considering climate-change related issues and solutions, thus presenting particularly relevant opportunities for the reduction of exposure and sensitivity to extreme weather events and to introduce adaptation measures to the everyday lives of communities. Furthermore, these opportunities can integrate measures for both climate adaptation and climate mitigation, which are particularly valuable for the Outermost Regions due to their constraints of size and insularity.

Throughout the development of the programme of exchanges between EU Outermost Regions, several actions and pathways have been identified as suitable integrate approaches for the adoption of climate adaptation and mitigation measures into territorial planning. While these mitigation measures are highly dependent on the idiosyncrasy of each of the regions, the **ACLIEMAC (Adaptation to Climate Change of Macaronesia's Energy Systems)** project was launched as an ambitious initiative that aims to find solutions for adaptation to climate change in the three Outermost Regions of the Macaronesia basin (Canary Islands, Madeira and Azores), by promoting their energy autonomy and independence.

The Canarian Institute of Technology develops a number of innovative technologies in the scope of the ACLIEMAC project. © Instituto Tecnológico de Canarias.

Through the adaptation of energy production, provision, and infrastructures to climate change, these Outermost Regions have made substantial progress towards increasing resilience and raising environmental awareness on achieving major adaptation of energy consumption to climate change. This project illustrates how a cross-regional integrated approach should be designed and implemented, as it encompasses a diverse range of partners (agencies, institutes, universities, etc.) across the Macaronesia basin, promoting a widespread and multi-faceted approach that has a great potential to confer a high level of transferability to similar projects in other sea basins.

ACLIEMAC – Adaptación al Cambio Climático de los Sistemas Energéticos de la Macaronesia (See Annex II, 5.4.1.1, Initiative 3)

The project promotes energy autonomy and resilience via adaptation to climate change in regions with weak energy systems, thus integrating climate adaptation and mitigation.

The geographical scope of the project encompasses all three Outermost Regions from the Macaronesia basin: the Canary Islands, Madeira and the Azores. It is co-financed by the European Regional Development Fund (ERDF) and is managed by a wide array of partners, including the Instituto Tecnológico de Canarias as the lead partner and the Unversidad de Las Palmas de Gran Canaria, Universidad de La Laguna, the Agência Regional da Energia e Ambiente da Região Autónoma da Madeira, Centro de Informaçao e Vigilância Sismovulcânica dos Açores and Gobierno de Canarias as partners.

3.1.4. Risk management in coastal areas

3.1.4.1. Solution 7: Establish networks and capacities for the exchange and improved accessibility of practices, studies, information and data

Establishing networks across multiple areas aids in the development of comprehensive solutions, as such wide-reaching problems require intersectional responses and cooperation of different actors across different disciplines. To this end, a regional space or platform can be set up where information is available, concerning practices, challenges, opportunities and trends, and to facilitate engagement and exchange of key stakeholders. Improved data accessibility can then facilitate greater adaptation efforts, for example better modelling for sea level rises.

A functioning network should promote capacity building by strengthening the knowledge of national, regional and local policymakers, thus overall promoting evidence-based policy making. I For example, such networks can help to create accurate models of prediction and reaction.

An example of a functioning network is the **BRIO** project, which has made substantial progress in developing high-resolution climate projections for regions like La Réunion (among others), providing a climate model that provides long-term trends in temperature, rainfall and cyclone activity in the region. Through training of climate experts in the use of datasets and creating a comprehensive portal for all data available, regional governments are supported in better understanding the implications of climate change for human health, water supplies, soil erosion and natural hazards.

ALADIN-Climat, a modelling tool used in the BRIO project. © BRIO

BRIO (See Annex II, 5.3.1.2, Initiative 4)

The project trained experts in different fields to exploit high resolution climate projects and datasets, and then provided these experts with the capacity to propagate what they had learnt to their colleagues.

The geographical scope of the project focuses on La Réunion Madagascar, Comores, Maurice and Seychelles. It is funded by Météo France et Adapt'Action and is entirely managed by the Indian Ocean Commission.

3.1.4.2. Solution 8: Ensure the protection and restoration of ecosystems that contribute to the resilience of coastal areas

Coastal areas in the Outermost Regions are particularly vulnerable to climate change impacts, as previously shown in Part 1. Sea-level rise and increased storm intensity can pose several threats to the long-term sustainability of the ecosystems of these areas, which play a major role in mitigating such challenges. For instance, these ecosystems support and serve as habitats for a number of unique and endemic species, as well as being crucial for the development and safeguard of core economic activities, such as agriculture and tourism.

Among several threats and risks to coastal areas, extreme weather events, such as cyclones and hurricanes, are potentially the most dangerous ones. Due to climate change, these events are becoming increasingly frequent, more powerful and less predictable. The scientific community, as well as technology, needs to evolve in order to adapt existing tools and models to the constant changing conditions and characteristics of current extreme weather events. Within the framework of this programme of exchanges, particularly vulnerable regions such as Mayotte and La Réunion are implementing projects that deploy new measurement tools and satellite observations to improve the assessment of the impact of climate change on cyclones, with the overall objective of enhancing cyclone forecasting in the South-West Indian Ocean.

The **RenovRisk-Cyclones** project illustrates the development of a digital model for the analysis of cyclones and cyclonic rainfalls, as well as estimating and evaluating the impact of climate change on future cyclones. This project is highly relevant for regions suffering from similar phenomena, as it not only provides tools for climatological analysis, but also ensures the training of staff, students, and a new generation of researchers in the field of climatology, cyclone forecasting and experimental meteorology.

Similarly, other projects such as **CARIB-COAST** bring together a number of islands of the Caribbean to find commonly applicable solutions to prevent coastal risks, particularly in Martinique and Guadeloupe. While RenovRisk-Cyclones focuses specifically on cyclones, CARIB-COAST benefits from an international partnership to pool, construct and disseminate monitoring and coastal risk prevention approaches, encompassing a wider arrange of risks and events. Thanks to the multidisciplinary approach of this project, observations and solutions will have a broader applicability across numerous

islands in the Caribbean basin, all of which are confronting growing challenges related to coastal risks. By sharing knowledge and implementing the project's findings, these islands can effectively address and mitigate the impacts of coastal hazards.

The coastlines of the island of Martinique are experiencing a growing impact from cyclonic events and a gradual rise in sea levels, both of which are linked to the effects of climate change. © CARIB-COAST

CARIB-COAST (See Annex II, 4.2.2.2, Initiative 1)
The project aims to create a Caribbean network for the prevention and management of coastal risks. By bringing various islands of the Caribbean, the project aims to find solutions to prevent coastal risks and adapt to the impacts of climate change.
The geographical scope of the project focuses on La Réunion, Madagascar, Comores, Maurice and Seychelles. It is funded by the Meteo France et Adapt'Action and is entirely managed by the Indian Ocean Commission.

RenovRisk-Cyclones (See Annex II, 5.2.1.1, Initiative 1)
The project aims to improve modelling tools and knowledge of tropical cyclones on the islands of the south-west Indian Ocean (SWIO). It focuses on the current and future meteorological and oceanographic impact of cyclones. The aim is to better understand the cyclone phenomenon and its hazards in order to make populations and territories in the SWIO less vulnerable to cyclones and climate change.
The geographical scope of the project focuses on Mayotte, La Réunion. Madagascar, Mauritius, Seychelles and Mozambique. It is funded by Météo Franc and formarly led by the University of La Réunion.

3.1.5. Tourism

3.1.5.1. Solution 9: Promotion of cost-effective climate adaptation and resilience measures

Climate adaptation and measures to build resilience are crucial for the long-term survival of businesses, particularly vulnerable areas of the Outermost Regions. The acceptance and adoption of such measures can be fostered by highlighting their cost-effectiveness and how they boost the competitiveness of businesses, by adequately preparing for climate change effects and increasing the appeal of the sector for consumers. This will encourage businesses to actively engage in such measures, thus contributing to both adaptation goals and local economies.

While these measures could be promoted and adopted by individual SMEs, their effects are maximised when they are implemented in a specific sector, increasing their reach and favouring efficiency.

Las Palmas de Gran Canaria's port is one of the various facilities associated with the project Nauticom. © Marina Las Palmas

With the aim of revitalising the tourism sector, the **Nauticom** project endeavours to foster an environment conducive to sport marinas (for recreational activities) and small nautical companies in the Macaronesia Sea basin. The project focuses on internationalisation, business cooperation, and innovation, aiming to facilitate a process of business renewal within the sector. In order to induce an innovative and holistic approach of the project, the establishment of a supra-regional network allows to promote smart specialisation and eco-innovation in the tourism sector and the overall improvement of the region competitiveness. The creation of similar forms of cooperation and collaboration is recommended to foster the exchange between businesses in other regions.

Nauticom (See Annex II, 5.4.1.2, Initiative 4)
The project aimed to facilitate the improved competitiveness and sustainability of maritime SMEs, including via the application of innovative and smart eco-specialisation measures.

The project essentially targets the Macaronesian sea basin, particularly the Canary Islands, Madeira and the Azores. It is funded by the European Regional Development Fund (INTERREG) and it is led by the Centro Tecnológico de Ciencias Marinas (CETECIMA), in partnership with diverse regional agencies, such as the Regional Directorate of Sea Matters (PT) and Management of the Rural Environment of the Canary Islands.

3.1.5.2. Solution 10: Implementation of resilient practices for climate change adaptation

The tourism sector in the Guadeloupe Archipelago is increasingly being threatened by adverse climate change effects. © Viktor Ruppert

The tourism sector is particularly exposed to the diverse threats posed by climate change, particularly those that directly have an effect over the climate stability of the region. As most visitors in basins such as the Caribbean-Amazonia one come during the summer (coinciding with the hurricane season), tourism activities and infrastructure are severely affected by climate change effects. These issues are further exacerbated by increasingly intense weather events which disable the proper functioning of ports and airports in most Outermost Regions, these being the sole and most important doorway to the archipelagos.

The implementation of resilient practices for climate change adaptation is crucial for a mid-long term sustainable evolution of the tourism sector. Several initiatives across the European Union have strived to establish a platform in which adaptation solutions are born, developed and implemented. One of the initiatives, namely the **TransformAr project**, aims to create an adaptable process that relies on open innovation. It focuses on providing climate data services that are user-friendly and easily accessible, as well as actionable solutions and conducting large-scale experiments.

One of the highlighted demonstrators (i.e. piloting experiences) of this project is located in the Guadeloupe Archipelago, in which the tourism sector represents 9.5% of the total GDP and provides direct employment to over 7.000 inhabitants.[15] Since climate change related challenges are threatening the viability and overall sustainability of the sector, one of the solutions proposed has been the establishment of a Local Adaptation Acceleration Fund, which will promote the development of innovative adaptation measures in the tourism sector.

In particular, solutions proposed for the region of Guadeloupe have an interesting transferability potential to the rest of Outermost Regions:

- Running a biophysical and economic modelling of the region to assess the impact of climate change to the sector and related infrastructure (accommodation facilities, for instance)
- Developing a Local Adaptation Acceleration Fund to finance innovative adaptation actions.
- Raising awareness and driving behavioural change via encouraging hotels to develop a sustainable behaviour towards biodiversity and water consumption.

Through the implementation and testing of these measures, adaptation solutions can be experimented and further fine-tuned to the specificities of each of the Outermost Regions. Successfully implementing them will entail higher resilience, attractiveness and competitiveness of the tourism sector within all regions.

TransformAr (See Annex II, 5.2.1.1, Initiative 4)
TransformAr aimed to demonstrate solutions and pathways, deemed essential for climate and social resilience to achieve rapid and far-reaching transformational adaptation (TA).
The geographical scope of the project was the Guadeloupe Archipelago. It is funded under the Horizon H2020 innovation action programme. The main stakeholders involved in the consortium are "Acterra and the Agence de la transition écologique (ADEME).

3.1.6. Water management

3.1.6.1. Solution 11: Establish networks and capacities for the exchange and improved accessibility of studies, information and data

Water management is an increasingly important issue that will particularly impact Outermost Regions due to their unique geographical and environmental characteristics.

[15] TransformAr's Guadeloupe demonstrator profile

Given their remote locations, access to freshwater is usually limited and managing available water resources efficiently is crucial to meet the needs of the local population, agriculture, and industries. Offering practical solutions to address the issue of water management has been one of the most challenging tasks of regional governments and will eventually pose a major threat as the capacity of water reserves is reduced across the different Outermost Regions

For such a particular shared challenge, the establishment of a network for the exchange and improved accessibility of practices, information and data may lead to create a platform in which several Outermost Regions can collaborate. One of the best practices that could potentially be transferred to the Outermost Regions under the scope of this programme of exchanges is the project "**Ensuring climate resilient water supplies in the Comoros Islands" (2019-2027).**

By leveraging the expertise gained from previous projects, the project aims to facilitate the sharing of best practices in water management to ensure that sufficient drinkable water supply for locals and for agricultural needs is provided, increasing the overall resilience of the island in case climate change hazards intensify. Policy making is also influenced by this project as it creates a common framework to promote increasing knowledge of national, regional and local policymakers. Given the multidisciplinary nature of the project, combining engineering, urban planification, policy making, meteorological monitoring and the engagement of local population, it could be replicated in the Outermost Regions.

Ensuring climate resilient water supplies in the Comoros Islands
The project aligns with Comoros' Accelerated Growth and Sustainable Development Strategy and the government's vision to reduce poverty and expand access to reliable and safe drinking water and sanitation, especially for the most vulnerable people like smallholder farmers that rely on rainfed agriculture to feed their families. The eight-year project works to achieve a national paradigm shift in water resources management, allowing the Government of Comoros to make good on commitments to increase water supply to 100 percent of its citizens by 2030 and provide all of our farmers with access to irrigation water.
The geographical scope of the project focuses on the Union of Comoros (Grande Comore, Anjouan and Mohéli).

4. Concluding remarks

Building upon existing European initiatives, the programme of exchanges of good practices brought together experts and projects, alongside regional strategies and innovative, community and nature-based approaches to compile a set of well-informed adaptation solutions for the OR and their neighbouring countries.

These approaches and initiatives included an analysis of climate adaptation initiatives in the three geographical basins and the organisation of a series of workshops held across them in which OR regional authorities, project representatives and other key stakeholders, including from neighbouring countries, presented and discussed their experiences and work on climate adaptation.

The present compendium provides a compilation of good practices and solutions of climate change adaptation. Specifically, the compendium represents a tool for the promotion of good practices for climate change adaptation, to contribute to the structural capacities, decision making and regional adaptation strategies of the Outermost Regions and their neighbouring countries. The selection criteria used to identify such good practices and solutions within the programme of exchanges were:

- The level of innovation
- The potential for replicability and transferability
- The degree of effectiveness of the solutions developed for the territory
- The level of cross-border cooperation

Overall, from the programme of exchanges and the compendium of good practices and solutions for climate change adaptation in the Outermost Regions of the EU, six key interrelated conclusions and takeaways emerge:

1. EU Outermost Regions have shown to be particularly exposed and vulnerable to climate change related hazards, owing mainly to their inherent insularity and remoteness. The programme of exchanges illustrated that climate change impacts are threatening the resilience of key economic sectors such as **agriculture** and **tourism**. **Biodiversity** is also facing intense pressure from the greater vulnerability of Outermost Regions to climate change, as particular human activities (such as tourism) are exacerbating the impacts on nature and ecosystems. Exposure to **extreme weather events** has also increased, as these events became increasingly frequent and intense over time, leading to increased concerns on **risk management in coastal areas** due to the greater incidence of coastal erosion, flooding and intensified rainfall. Consequently, and as observed in many Outermost Regions, **water management** is a growing challenge as the frequency and duration of droughts have increased as an effect of climate change.

2. Thanks to their unique assets - their biodiversity, oceans, geology and climate - the Outermost Regions also have the potential to be living laboratories for piloting innovative climate adaptation solutions. In other words, the Outermost Regions

have become **pioneering testbeds**, yielding valuable results and lessons learned that can be leveraged for the ultimate benefit of other regions across the EU. These adaptation practices and solutions are inherently systemic, rooted in an understanding of **the interconnected nature of climate challenges**.

3. Projects and initiatives across the Outermost Regions, and neighbouring third countries, are developing cutting-edge and collaborative climate adaptation solutions encompassing multiple critical sectors, providing an invaluable wealth of good practices that **can also be transferred and implemented in different contexts** in the Outermost Regions and in their neighbouring third countries.

4. The identified practices and solutions demonstrate how projects on climate change adaptation - most of which are EU-funded, as shown in Part 2 of the Compendium - are concretely supporting the implementation of the objectives of a number of EU strategies. The solutions and practices showcased are aligned with the 2022 **strategy for the EU's Outermost Regions**, which envisages exchanges on climate action between the outermost regions and their neighbours, and with several pertinent EU strategies, such as the **EU Strategy on Adaptation to Climate Change**, which stresses the importance of making adaptation smarter, swifter and more systemic. Furthermore, the **EU Biodiversity Strategy** highlights the importance of the Outermost Regions' biodiversity by placing particular focus on the protection and restoration of tropical and sub-tropical marine and terrestrial ecosystems in the EU's Outermost Regions, given their exceptionally high biodiversity value. Accordingly, solutions and practices identified are also in line with national climate change adaptation plans, while adhering to the guidelines established at the Paris Agreement.

5. A broad variety of EU funds have supported the development and implementation of climate change adaptation practices and solutions in the EU Outermost Regions and their neighbouring countries and territories. In this regard, the practices and solutions included in the compendium as well as more broadly those identified in a mapping exercise, demonstrated that many different EU funding streams are fundamental at supporting the implementation of such practices and solutions. These streams include the **European Regional Development Fund (ERDF), the European Social Fund (ESF), the Horizon 2020 and LIFE Programme**, **possibly the Just Transition Fund (JTF).**

6. Looking ahead, the projects identified in this programme of exchanges and the compendium itself provide a sound benchmark on how to design and implement shared practices and solutions. Climate change adaptation will remain a key issue to be addressed by EU Outermost Regions and their neighbouring countries. Existing practices and solutions (namely those identified in the programme of exchanges and in the compendium) will need to be transferred and replicated. However, further innovative practices and solutions will undoubtedly need to be developed. The EU funds mentioned above (ERDF, ESF, Horizon Europe, LIFE) will continue to be of paramount importance as they all feed into the **EU´s 2021-2027 objectives for a Greener Europe**. Furthermore,

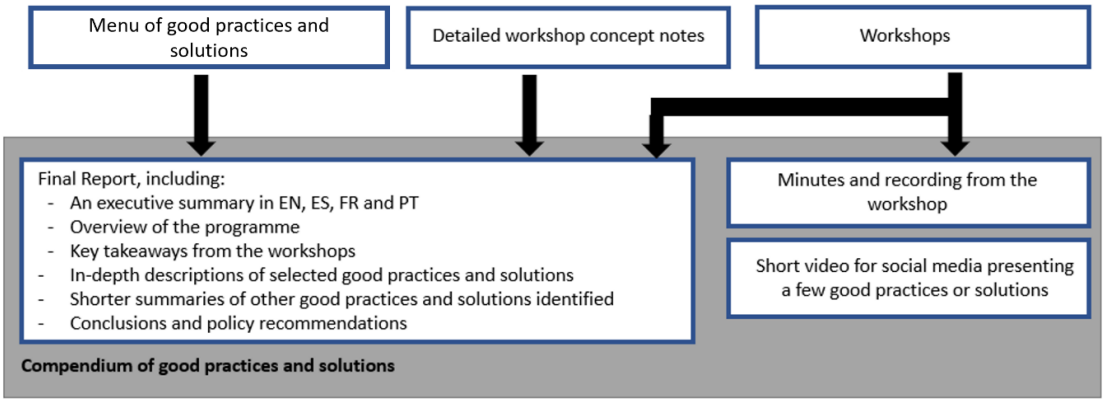
the introduction of the **EU Mission on Climate Change Adaptation** under the EU Strategy on Adaptation to Climate Change also further consolidates the EU´s efforts on regional and local levels.

The programme of exchanges on climate change adaptation between the EU Outermost Regions and with their neighbouring third countries has supported and inspired their cooperation in addressing their joint challenges of climate change. The overall objective was to enhance cooperation within the same geographic basin and identify innovative initiatives that could be replicated in each basin and beyond. As such, it has fostered a framework for discussion on common climate adaptation challenges and identified good practices and solutions as presented in this compendium.

5. Annexes

5.1. Annex I. Methodology of selection of projects to be considered as good practices

Figure 2. Main composition and references of the compendium of good practices and solutions



The development of the compendium of good practices and solutions entailed the extraction and subsequent incorporation of key examples of projects and initiatives from the workshops conducted in the Outermost Regions. Nine online workshops have taken place with representatives, projects and participants from across the three sea basins and thus provided the basis for this development, with the view of supplementing the compendium with those good practices and solutions to be extracted from these workshops.

In each of the workshops conducted, representatives from relevant identified projects, academic and specialised institutions, regional governments and municipalities, and various other key stakeholders were invited to contribute to the discussions that took place and exchange their valuable insights on the crucial matters at hand.

A final event to complete the programme of exchanges in the EU Outermost Regions took place physically on Tuesday 13th June 2023 in Las Palmas, Gran Canaria. As part of the agenda of the event, the compendium of good practices and solutions to common challenges of adaptation to climate change was presented and then discussed in a following Q&A session.

The process by which the good practices and solutions were extracted and incorporated was as follows:

- **Step 1: Integrating additional information on already identified good practices and solutions**

From the presentations, question and answer sessions, and other discussions that took place during the various workshops, additional information on good practices and solutions have been gathered to further complement those previously identified as part

of the efforts of Task 1. This information was extracted from the workshops to feed into the compendium.

- **Step 2: Adding new good practices and solutions based on new findings from workshops**

A comprehensive review of relevant projects presenting good climate change adaptation practices and solutions was conducted under Task 1, while a number of further, more general good practices and solutions were identified from the workshops delivered under Task 2, drawn from the participatory discussions that took place amongst the myriad key stakeholders present. Furthermore, where appropriate, further research was completed to complement the draft fiches with additional good practices and solutions.

The information on good practices and solutions extracted from the two steps previously described were then incorporated into the compendium, providing a valuable resource that will address the significant knowledge gaps where the EU could benefit from existing experience. The relevance of such good practices and solutions was assessed based on the screening criteria used in Task 1, with due consideration of an appropriate and proportionate representation of all the Outermost Regions and their neighbouring third countries.

5.2. Annex II. Additional good practices and solutions

5.2.1. Caribbean-Amazonia Basin

5.2.1.1. Climate change adaptation to extreme weather events and coastal resilience

Initiative 1: CARIB-COAST	
Website	https://www.carib-coast.com/en/
Geographical scope	Martinique, Guadeloupe Puerto Rico, Trinidad and Tobago, Jamaica.
Stakeholders involved	**Lead partner** : BRGM (Bureau des Recherches Géologiques et Minières) **Partners** : IFREMER – Institut français de recherche pour l'exploitation de la mer (Martinique), ONF- Office National des Forêts (Guadeloupe), IRD – Institut de Recherche pour le Développement (Marseille), CAR-SPAW – Centre d'Activités Régional pour les espaces et espèces spécialement protégés de la Caraïbe (Guadeloupe), Parc National de la Guadeloupe (Guadeloupe), Délégation Paris B du Centre National de la Recherche Scientifique (Paris), Universities of West Indies – Ste Augustine (CampusTrinidad et Tobago), Minister of Work, Transport, Coastal Protection Unit (Trinidad et Tobago), AEC – Association des Etats de la Caraïbe (Trinidad et Tobago), CARICOOS (Porto Rico), Mona Geoinformatics Institute (Jamaïque), Mona Informatix Limited (Jamaïque)
Relevance	CARIB-COAST is an international project financed by the European programme INTERREG Caribbean. It started in 2018 and has ended in 2022. It benefited from an international partnership made of partners from the French Outermost Regions as well as from third countries. Its objectives were to pool, co-construct and disseminate monitoring and coastal risk prevention approaches and adaptation to climate change, and to lay the foundations of a Caribbean network for the prevention and management of a coastal risk crisis liked to climate change.
Impacts and results	The project aimed to: • implement a hydrodynamics modelling platform based on a Caribbean measurement network, for the simulation of current and future hazards • develop a Caribbean network of coastal erosion observatories and promotion of mitigation techniques using natural ecosystems. • Develop tools for decision support, create exchanges, deliver training and awareness-raising among Caribbean actors.
Innovative aspect	The project is bringing together various islands of the Caribbean to find common solutions to prevent coastal risks and adapt to the impacts of climate change.
Transferability	The project aims to create a Caribbean network for the prevention and management of coastal risks. The observations and solutions developed by the project will be beneficial for most islands of the Caribbean basin faced with increasing coastal risks.

Initiative 2: READY TOGETHER	
Website	https://interreg-caraibes.eu/ready-together
Geographical scope	Guadeloupe, Martinique, Eastern Caribbean States
Stakeholders involved	Lead partner: Regional Intervention Platform for the Americas and the Caribbean of the French Red Cross Partners: Regional council of Guadeloupe, AFD, Organisation of Eastern Caribbean States (OECS).
Relevance	The project aims at strengthening the preparedness and response capacities of Caribbean populations to major hazards and the consequences of climate change.
Impacts and results	Activities of the project include: • strengthening the regional coordination and disaster management mechanisms • Increasing the preparedness and resilience of economic actors, in particular small and medium-sized businesses. • Promoting risk awareness among Caribbean youth and regional advocacy through a joint regional awareness campaign on major risks and adaptation to climate change.
Innovative aspect	The project follows an integrated approach to crisis preparedness to ensure that the basic needs of Caribbean populations exposed to natural hazards and the effects of climate change and met effectively.
Transferability	Lessons learned from this project could benefit other regions and countries vulnerable to climate change and extreme weather events, in particular looking at the results of the awareness raising campaign, as the lack of awareness is often a challenge in many of the Outermost Regions.

Initiative 3: ReleV	
Website	https://relev.cerema.fr/
Geographical scope	Saint-Martin, Saint Barthelemy
Stakeholders involved	**Project leader**: CEREMA (French Centre for Studies and Expertise on Risks, the Environment, Mobility and Urban Planning). **Partners** : CEMOTEV, GEOPS Géosciences Paris-Sud, LPPL LABORATOIRE DE PSYCHOLOGIE DES PAYS DE LA LOIRE, LAB'URBA Laboratoire d'Urbanisme, GEORESSOURCES,, CeremaOuest.
Relevance	The project aims to better understand post-disaster reconstruction management strategies and is funded by the ANR (French National Research Agency). Responding to the priority of "building back better", the project proposes to rely on an integrated and transversal approach that associates experts in natural hazards (geography, civil engineering, geology), spatial planning (urbanism, architecture), human sciences (psychology, sociology, history). It focuses on the ongoing recovery of Saint-Martin and Saint-Barthélemy, following the hurricanes Irma and Maria in September 2017. The project team monitors the post-disaster reconstruction strategies being developed. In addition, the project aims to develop a transdisciplinary methodology to improve the management of the reconstruction of territories following natural disasters.
Impacts and results	The project's ambitions are: • to develop a method to anticipate the management of post-disaster reconstruction at territorial level in order to face future events • to define rules for integrating natural risks into territorial planning processes to enable sustainable economic development
Innovative aspect	Results and lessons learned from the project will help to improve anticipation in future disaster areas and to equip local actors in affected areas, as well as promoting the creation of innovative reconstruction strategies at the national level.
Transferability	The methods and tools developed via the project are useful not only to the target territories of Saint-Martin and Saint-Barthelemy, but can also serve other vulnerable or affected territories.

Initiative 4: ADAPT'ISLAND	
Website	LIFE ADAPT'ISLAND
Geographical scope	Guadeloupe
Stakeholders involved	Union Regionale Des Associations Du Patrimoine Et De L'Environment De La Guadeloupe
Relevance	The project is coordinated by the **Grand Port Maritime de la Guadeloupe**. It is funded through the EU LIFE programme, and started in 2019 and will end in 2024. Its objectives are to make the territory better adapted to climate change and to build its resilience against extreme climate events. It will restore and protect coastal and marine ecosystems and their ecological connections and improve the quality of goods and services that these ecosystems provide.
Impacts and results	The project's expected results are: • more than 5 600 ha of coasts protected; • a new climate adaptation strategy for over 90 000 inhabitants, with a focus on people living less than 10m above sea level. Almost 400 000 people are expected to benefit indirectly; • around 1 200 school children informed about the implemented climate adaptation strategies; • at least 45 000 m of coral reef restored by planting more than 15 000 specimens of nursery-cultivated coral at degraded sites.
Innovative aspect	Goals of the project include the development of an innovative and transferable strategy to adapt to climate change as well as the demonstration of the efficiency and replicability of innovative techniques for restoring coastal and marine ecosystems in the Caribbean.
Transferability	

Initiative 5: Building community resilience to reduce flood risk in St Lucia and Grenada	
Website	http://www.karayibklima.unite-caribbean.com/renforcer-la-resilience-des-communautes-pour-reduire-les-risques-dinondation-a-sainte-lucie-et-a-la-grenade/
Geographical scope	St Lucia, Grenada
Stakeholders involved	The Nature Conservancy, InPhinity
Relevance	The project's objectives are to put in place effective flood risk mechanisms in coastal cities Grenville and Dennery, to build community resilience to the impacts of flooding through the implementation of nature-based initiatives and to develop techniques to collect and store excess rainwater for use during the drier months of the year. The project also replies to climate challenges in the agricultural sector, which could be a bridge with the second workshop organised on 6 September 2022.
Impacts and results	The project activities include: • collecting relevant data to feed into models and actions to be taken against flood risks • select sites where interventions will be implemented in consultation with farmers and relevant stakeholders • train farmer on rainwater collecting options • acquire and install equipment on site based on the agreement with farmers and stakeholders • document through stories, testimonies and best practices • conduct exchanges between the two cities with farmers and community members.
Innovative aspect	The project aims to both reduce the risk of inundation and to collect rainwater to address drought challenges.
Transferability	The planned transferability of skills between the two territories will allow for the sharing of good practices and essential knowledge

5.2.1.2. Resilient agriculture practices for climate change adaptation

Initiative 1: CambioNet - Caribbean and Amazonian Bioeconomic Network	
Website	CambioNet
Geographical scope	Haiti, Cuba, Dominican Republic, Guadeloupe, Martinique, OECO, Trinidad & Tobago, Barbados, French Guiana, Suriname.
Stakeholders involved	Universities, R&D Institutions, Agricultural chambers, International organisations, research institutions and NGOs.
Relevance	This project involves the cooperation of a broad range of actors from different countries and regions in the Caribbean-Amazonia basin. It aims at enhancing the bio-economic transition and the agri-food and economic performance of the basin. Among others, the projects notably aims to address challenges related to the climate transition and adaptation of the agricultural sector, as well as food sovereignty.
Impacts and results	The project aims to: • Pose a diagnosis on bio-resources and innovative techniques in agroecology, agro-processing and bioeconomy ; • Develop innovative pilot systems via an inter-regional network of connected innovation platforms (Living Labs), and start-ups ; • Establish an inter-regional network for dissemination and agricultural advice ; • Make available a common digital library for the dissemination of knowledge, good practices, and training/learning modules etc. ; • Provide public decision-makers with decision-making tools to strengthen the effectiveness of agricultural public policies adapted to the diversity of our regions.
Innovative aspect	The project aims to boost the innovative capacity of farms, through networks of living labs strategically placed and connected for the development of innovations, and through the incubation of innovative ideas and the creation of start-ups.
Transferability	The project has strong potential for transferability through the creation of an inter-regional network of actors.

Initiative 2: EXPLORER	
Website	Explorer
Geographical scope	Guadeloupe

Stakeholders involved	INRAE
Relevance	The EXPLORER project aims to produce original knowledge to explore the potential for agro-ecological and economic valorisation of residual biomasses and foster the transition toward climate-smart agriculture. The emerging concept of Climate Smart Agriculture aims to provide an integrated approach of agriculture to address the triple challenge of food security, adaptation of systems to build resilience and mitigation of climate change.
Impacts and results	The main results expected from the EXPLORER project are: 1) the development of climate change scenarios for French West Indies; 2) a diagnosis of agricultural vulnerability at different scales; 3) the identification of innovative agricultural systems based on agro-ecology and bioeconomy; 4) to co-design and integrated assessment of territorial-scale transition scenarios including the adoption of new farming systems and the definition of new agri-environmental policies

Initiative 3: ARTIMIX	
Website	Artimix
Geographical scope	Guadeloupe, Martinique, Brazil, Colombia
Stakeholders involved	Centre international de coopération en recherche agronomique pour le développement (CIRAD), l'Institut National de Recherche Agronomique (INRA), l'Institut Technique Tropical (IT2), l'Université des Antilles (UA), l'Université national de Brasilia (UnB) et le Centre International d'Agriculture Tropicale (CIAT).
Relevance	ARTIMIX aims to determine the conditions for the successful design and implementation of a policy mix to promote adaptation to climate change in vulnerable tropical agricultural territories in Guadeloupe and Martinique, Brazil and Colombia.
Impacts and results	Specific outputs will include: 1) a characterisation of the convergences and divergences between the concepts used to address climate change adaptation and their integration into climate change adaptation policies 2) an identification of the factors affecting their implementation and the synergies and tensions between instruments aimed at strengthening farmers' capacities to adapt to climate change 3) an assessment of the practices promoted by the policies in terms of their capacity to support farmers' adaptation to climate change and their socio-economic and environmental outcomes.

Initiative 4: TransformAr, Demonstrator 3: Guadeloupe Archipelago	
Website	TransformAr

Geographical scope	Guadeloupe
Stakeholders involved	ADEME Guadeloupe, Acterra.
Relevance	TransformAr aims to demonstrate solutions and pathways, deemed essential for climate and social resilience to achieve rapid and far-reaching transformational adaptation (TA).
Impacts and results	Actions and expected results for the demonstrator in Guadeloupe include: • Agriculture (1.5% of the Guadeloupe GDP), with 2 dominant and highly subsidised crops grown mainly for exportation: sugarcane and bananas. Guadeloupe imports about 80% of its food. Farming is impacted by more intense and frequent droughts and floods, higher temperatures, and more destructive hurricanes. The attempts for culture diversification are threatened by these extreme phenomena. The Directorate-General of Research and Innovation (DG RTD) has started to design and encourage new models of sustainable farming and crops to increase both food and climate change resilience. • Tourism (9.5% of the Guadeloupe GDP), with about 850 000 visitors each year. Most visitors come during the summer, which is the hurricane season. Thus, tourism activities and accommodations are directly affected by climate change as the region experiences stronger hurricanes and coastal erosion mostly due to sea elevation. A local adaptation acceleration fund for municipalities, businesses and farmers with adaptation plans and specific projects. Awareness-raising, and behavioural change will be reached via nudging: cognitive design artefacts and behavioural economics artefacts released to end-users at specific moments in time, often correlated to a trigger and state of mind, to develop a new sustainable behaviour.

Initiative 5: Strengthening agricultural adaptation to climate change in the commune of Beaumont	
Website	Agricultural adaptation Beaumont
Geographical scope	Guadeloupe, Haiti
Stakeholders involved	This project involves Farmers' groups of the Grand'Anse in Haiti (ADPG) and from Guadeloupe (KAP GWADLOUP), a regional multi-stakeholder network (APECA) and a local company (CoReCa). It is financed through the Karayib Klima, an initiative funded by the French Ministry of Europe and Foreign affairs, the ADEME and Fondation de France.
Relevance	This project aims to reinforce the resilience of agro-ecosystems and limit the negative impacts of climate change. It follows three specific objectives: • To fuel a deeper reflection on production areas; • To give a faster economic impulse to farmers' groups;

	• To develop exchanges of know-how between territories facing the same problems.
Impacts and results	The project will contribute to: • Awareness-raising and training with the dissemination of agronomic practices that enable farmers' groups to produce more sustainably and efficiently; • Capacity building in agroecology by improving skills in planting according to the rules of agro-ecology. • Networking and transferability of know-how through exchanges and support for the development of the Grand-Anse peasantry, providing an understanding of agroecology and its economic, social and environmental dimensions.
Innovative aspect	The project is based on the complementarity of the partners involved. It meets the objectives of disseminating knowledge and implementing new adapted and resilient agricultural practices.
Transferability	This project has potential for transferability as it is built around exchanges across regions and stakeholders in the Caribbean basin.

Initiative 6: Smile Cheese and Tomate - Food security for vulnerable communities	
Website	Smile Cheese and Tomate
Geographical scope	Haiti, Dominica
Stakeholders involved	This project involves a Dominican business association (The Dominica Herbal Business Association) and an NGO based in Haiti (Le Réseau de l'Espoir). It is financed through the Karayib Klima, an initiative funded by the French Ministry of Europe and Foreign affairs, the ADEME and Fondation de France.
Relevance	The objective of the project is to mitigate the impact of climatic events on communities, through targeted actions to increase access to and preparation of food, develop the capacity of communities to generate income, and to enhance soil fertility and its ability to recover. More specifically, the project aims to • Improve soils and reduce erosion through the combination of plants; • Increase the capacity of communities to produce protein-rich food, process and cook it even in case of natural hazards (through the 3 multipurpose drying facilities).
Impacts and results	The Project will contribute to: • Planting and cultivation of protein-rich plants with specific species to prevent soil erosion and provide biomass for use as natural fertilizer; • Construction of 2 multi-purpose dryers using 20-foot containers for community storage; • Development of a prototype solar cooker and increased production to meet community needs and sell to other territories; • Processing of planted crops: drying and grinding of beans to produce flour.

Innovative aspect	This project provides practical solutions to the important issue of food security and the climate resilience of communities. It addresses both soil erosion issues, the need for self-sufficiency and the challenges posed by the lack of electricity.
Transferability	This project is particularly relevant for vulnerable communities and can also address some challenges faced by territories facing extreme weather events (Workshop 1).

Initiative 7: Sustainable agricultural production as a solution to climate change	
Website	Sustainable agriculture
Geographical scope	Cuba
Stakeholders involved	This project is led by French NGOs (CCFD-TERRE Solidaire, Secours Populaire Français and Oxfam France) and implemented by the Cuban NGO ACPA gathering producers, researchers and professionals related to livestock. ACPA will collaborate with local professional agricultural and peasant organizations. The project is funded by the AFD.
Relevance	The objective of the project is to strengthen the resilience of the territory's food systems to meet its needs and seeks to sustainably increase productivity.
Impacts and results	The project will notably contribute to: • Increasing the productive capacity of 50 family farms through agroecology and strengthen the role of women/youth. • Strengthening the capacities of 10 productive units through inclusive (women/youth) and climate change resilient family farming. • Recognising and disseminating as references the contributions of 50 family farms for resilient and inclusive agriculture in the face of climate change impacts.
Innovative aspect	This project tackles climate adaptation issues through a multidimensional approach, encompassing gender equality and social aspects.
Transferability	This project has potential for transferability as it tackles environmental, social and economic issues. The resilience of agriculture practices and food systems in the region is becoming an increasingly relevant area following the COVID-19 pandemic (strategic autonomy) and the recent geopolitical situation in Ukraine (food security).

5.2.2. South-West Indian Ocean Basin

5.2.2.1. Solutions for adaptable and resilient agricultural systems and food security

Initiative 1: ECLIPSE	
Website	ECLIPSE
Geographical scope	La Réunion, Madagascar, Australia, Comoros, India, Mozambique
Stakeholders involved	**Lead partner:** CIRAD - French agricultural research and cooperation organization **Partners:** Association Réunionnaise de Pastoralisme (ARP), Fédération Régionale des Coopératives Agricoles (FRCA), Centre d'Economie et de Management de l'Océan Indien (CEMOI), SICAREVIA, SICALAIT, Dahari (NGO), Centro Universitario de Changalane - Universidade Eduardo Mondlane (CUC-UEM), Bharatiya Agro Industries Foundation (BAIF) - Development Research Foundation, Telangana University for Veterinary, Animal and Fishery Sciences (PVNR TVU), National Institute of Animal Nutrition and Physiology (NIANP ICAR), Centre National de la Recherche Appliquée au Développement Rural (FOFIFA), Centre National de Développement Rural et de Recherche Appliquée (FIFAMANOR), Fambolena Malagasy Norveziana, Groupe de Recherche et d'Echanges Technologiques (GRET), AVSF, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Murdoch University, Charles Sturt University (CSU)
Relevance	ECLIPSE is an inter-regional project that studies how agricultural and livestock production systems can be adapted to address climate change. The project seeks to design, assess and implement strategies to adapt ruminant production systems to environmental and socio-economic changes. To do so, it aims to develop innovative management tools.
Impacts and results	Activities of the project include: • Development of portable tools to measure the nutritional value of forage • Promotion of different preservation techniques for fodder biomass and nutrients • Strengthen the use of the full range of actual forage resources • Development of forward-looking strategies to ensure the resilience of livestock production systems depending on climatological and nutritional constraints
Innovative aspect	The project puts animals and agriculture-livestock interactions at the heart of adaptation mechanisms, and its approach is adapted to different scales, from the animal to the territory.
Transferability	The geographical scope of the project showcases the adaptability of the project to different geographic, economic and cultural contexts, facilitating the dialogue between stakeholders.

Initiative 2: PREFER	
Website	PREFER
Geographical scope	Comores
Stakeholders involved	Comores Ministry of Agriculture
Relevance	The Family Farming Productivity and Resilience Support Project (PREFER) aims to help 35,000 vulnerable smallholder farmers both increase agricultural production and their ability to deal with climate change, but also raise their incomes and improve food and nutrition security.
Impacts and results	Operating in 48 villages, PREFER promotes the production of local staple foods such as bananas, cassava and vegetables, both for the domestic market and to generate surpluses that can be sold
Innovative aspect	The project supports better performing, climate-smart family farming practices, links to markets and income generation.
Transferability	The techniques promoted by the project are highly relevant for other small island states of the basin.

Initiative 3 : EpiBio-OI	
Website	EpiBio-OI
Geographical scope	Comoros, Madagascar, Mauritius, La Réunion, Seychelles
Stakeholders involved	**Lead partner:** CIRAD - French agricultural research and cooperation organization **Partners**: Institut National de Recherche pour l'Agriculture, la Pêche et L'Environnement (INRAPE), University of the Comoros (phase 1 only), University of Antananarivo, Centre National de la Recherche Appliquée au Développement Rural (FOFIFA), Centre National de Développement Rural et de Recherche Appliquée (FIFAMANOR), Direction de la Protection des Végétaux du Ministère de l'Agriculture et de l'Élevage (DPV MINAE), Centre d'Expérimentation et de Formation en Fruits et Légumes (CEFFEL), Centre Technique Horticole de Tamatave (CTHT, phase 2 only), Ministry of Agro Industry and Food Security, Food and Agricultural Research and Extension Institute (FAREI), University of Reunion Island, National Research Institute for Agriculture, Food and the Environment INRAE, Chambre of Agriculture of Reunion Island, DAAF Réunion, Direction de l'Alimentation de l'Agriculture et de la Forêt de la Réunion, Direction de l'Environnement, de l'Aménagement et du Logement de la Réunion (DEAL), Agence Nationale de Sécurité Sanitaire de l'Alimentation, de l'Environnement et du Travail (ANSES), Volontaires pour la France, Fédération Départementale des Groupements de Défense contre les Organismes Nuisibles de la Réunion (FDGDON, phase 1 only), Groupement de Défense Sanitaire de la Réunion (GDS), Fédération Régionale des Coopératives Agricoles de la Réunion (FRCA, phase 1 only), Association Réunionnaise pour la Modernisation de l'Economie Fruitière, Légumière et Horticole à la Réunion (ARMEFLHOR, phase 1 only), Coccinelle © (phase 1 only), Seychelles Agricultural Agency (SAA), National Biosecurity Agency (NBA, phase 1 only), Indian Ocean Commission (IOC), International Union for Conservation of Nature (IUCN, phase 1 only), FAO/IAEA, Joint Division of the Food and Agriculture Organization of the United Nations and the International Atomic Energy Agency (phase 1 only)

Relevance	EpiBio-OI aims to participate in the protection of the terrestrial biodiversity of the islands of the South-West Indian Ocean zone while strengthening food security in the face of climate change.
Impacts and results	Activities of the project include: • Publication of invasive alien species databases, after their nature and the degree of invasion have been identified • Publication of crop pests databases (these harmful organisms include bacteria, viruses, insects, fungi and nematodes). • Implementation of identification tools, including an online portal and a smartphone application ("Pl@ntnet") for the collaborative identification of plants, pests and beneficials. • Improvement of the regional epidemiological surveillance of different diseases and pests. • Strengthening of biocontrol measures to tackle diseases and pests
Innovative aspect	Agroecological protection strategies against pests are implemented, simultaneously with the development of regional expertise in biocontrol engineering for regional agroecological or organic agriculture using appropriate tools.
Transferability	The geographical scope of the project showcases the adaptability of the project to different geographic, economic and cultural contexts, facilitating the dialogue between stakeholders.

Initiative 4: Strengthening Coordination, Scaling up and Governance of Conservation Agriculture in Southern Africa (SUCASA)	
Website	SUCASA
Geographical scope	Madagascar
Stakeholders involved	National Task Force on Conservation Agriculture in Madagascar (TFNAC).
Relevance	The objective of the project is to support the scaling up of the transformation of the current low-productivity, conventional and non-resilient to climate change production system into high-productivity, sustainable agriculture through the adoption of the Climate Smart Agriculture (CA) approach and techniques and the improvement of stakeholder coordination, partnership building and knowledge sharing
Impacts and results	The project activities are - Mapping and documenting CA entry points to national development frameworks - Mapping of CA knowledge resources - Development of CA advocacy materials for policy makers and producers (videos, brochures) - Knowledge exchange on CA - Update of the CA scaling up strategy

	- TFNAC visibility events - Establish and support a network of KT champions to advocate for KT at national level - Organisation of stakeholder success story exposure events
Innovative aspect	The SUCASA project is particularly innovative in terms of the activities and means it has put in place to improve knowledge sharing and the promotion of climate-smart farming techniques.
Transferability	The results and lessons learned from stakeholder awareness and advocacy activities may be beneficial for other regions wishing to promote the same type of practices.

Initiative 5: Climate Smart Agriculture for small holders in Mauritius	
Website	Mauritius Climate Smart
Geographical scope	Mauritius
Stakeholders involved	**Lead partner:** The Global Climate Change Alliance Plus Initiative (GCCA+) **Partners**: University of Mauritius
Relevance	The main goal of the project is to enable farmers in Mauritius to transform unsustainable agricultural practices (involving high levels of agrochemicals and high inputs of fertilizers and pesticides) into climate change smart agriculture.
Impacts and results	Activities of the project include: • Train farmers in the use of smart farming techniques to improve production and minimize environmental degradation along the coast (e.g., the use of soil mulch instead of synthetic fertilizers) • Create a reference manual, reporting good agricultural practices.
Innovative aspect	The project is based on practical and concrete training of farmers and ensures the conservation of the knowledge acquired in the collection of good agricultural practices.
Transferability	The development of sustainable agricultural practices is a challenge faced by most Outermost Regions. The development of a compendium of good practices provides the basis for knowledge transfer.

Initiative 6: Biodiversity conservation in North Kenya	
Website	Biodiversity conservation in North Kenya
Geographical scope	Kenya
Stakeholders involved	**Main partner:** Government of Kenya, Kenya Wildlife Service, Kenya Forest Service

Relevance	The project aims to establish the conditions for sustainable development in an arid region of northern Kenya, notably through the protection of the Marsabit forest and the promotion of sustainable natural resource management and use.
Impacts and results	Activities of the project include: • Preservation of the Marsabit forest, allowing for the sustainable development of communities living around it • Touristic development of North Kenya • Boosting of pastoral activities • Sustainable management of wood, water and fodder resources • Improvement of security and conflict prevention
Innovative aspect	The project is implemented as part of a coordinated territorial action involving the Kenyan protected areas and wildlife services, the local government, local NGOs, pastoralists and representatives of the town of Marsabit.
Transferability	Deforestation and food security are major concerns in the basin. The lesson learned in Kenya will contribute to improving the biodiversity conservation in the South-West Indian Ocean.

Initiative 7: SIAAM	
Website	SIAAM
Geographical scope	La Réunion
Stakeholders involved	**Lead partner:** CIRAD - French agricultural research and cooperation organization
Relevance	The SIAMM project works with stakeholders at the territorial level to promote agricultural production systems that are productive, efficient, sustainable and adaptable to global changes.
Impacts and results	The project has been divided in three phases encompassing the following activities: • Improvement of fertilisation practices leading to enhanced management of residue recovery through new practices and tools. • Development of sustainable value chains in the sectors of farms and agriculture via the production of biomass and its agricultural and energy recovery in agricultural production systems. • Usage of tools and development of spatial strategies for improving management of agricultural activities.
Innovative aspect	The project will provide actors with tools to promote appropriate territorial management of the services and impacts of agricultural activities.
Transferability	The tools developed by the projects can be used by stakeholder to represent and study spatial dynamics in order to collectively define territorial strategies for the management of agricultural activities.

Initiative 8: SeqCoi	
Website	SeqCoi
Geographical scope	Reunion, Madagascar and Rodrigues
Stakeholders involved	**Lead partner:** Institut de Recherche pour le Development (IRD), French Government, Eco&Sols **Partners**: CIRAD, Laboratoire des Radioisotopes (Université d'Antananarivo), Direction de l'environnement, de l'aménagement et du logement (French Government), Ter Mer Rodriguez, Association Fades, Agrisud International
Relevance	SeqCoi aims to study the supply and demand for carbon sequestration. By using scientific research outcomes, tools are compiled and used as base for territorial policy to mitigate greenhouse gas emissions. This is done through carbon sequestration in soils and biomass.
Impacts and results	Activities of the project include: • Strengthening capacities by ensuring transferability in technologies, methodologies, knowledge, training and the compiling of a database in each geographical location • Training junior experts • Developing a public decision-making tool for spatialized greenhouse gas balance for multiple sectors
Innovative aspect	The project is a blend of technical expertise and knowledge sharing, both of which are key elements for ensuring forward-looking advancements in climate-change resilient agriculture.
Transferability	The knowledge sharing aspect is central to this project. As such, the coordinators have experience in pedagogically sharing tools and information to newly involved parties. Additionally, the project takes place in different geographical locations, highlighting its adaptability to next contexts.

Initiative 9 : 4 pour 1000 Outre-Mer	
Website	4 pour 1000 Outre-Mer
Geographical scope	Guadeloupe, Martinique, Guyane, La Réunion, Mayotte, Saint-Martin and Saint-Barthélemy.
Stakeholders involved	**Lead partner:** CIRAD - French agricultural research and cooperation organization **Partners**: Institut national de la recherche agronomique (INRAE), Institut de Recherche pour le Development (IRD), l'ADEME, the French Outermost Regions Ministry, the French Ministry of Agriculture, AFD, ODEADOM, ACTA, IDELE, Arvalis, Terre Inovia, ONF, QualiTropic, SOLAGRO, the permanent assembly of the Chambers of Agriculture, the French association of agroforestry, Regional ADEME, regional Directorate of Agriculture and Forestry, regional Directorate of Environment, Planning and Housing, regional Chamber of Agriculture and local authorities.
Relevance	The project contributes to the implementation of agricultural and forestry practices strengthening mitigation and adaptation to the effects of climate change and to the objectives of the Trajectory 5.0 policy in Outermost Regions through carbon storage in soils. The project includes sharing scientific knowledge on soil carbon sequestration between ultra-marine territories.

Impacts and results	Activities of the project include: • To carry out a state of biophysical, agronomic and silvicultural analysis on soil carbon stocks, their determinants, the dynamics of stocks according to land use and agricultural and forestry practices, the greenhouse gas (GHG) balance according to land use and agricultural and forestry practices • To carry out a state of economic and social analysis on soil carbon, including: the current level of implementation of practices maintaining or increasing soil carbon stocks and their current dynamics, and the social and economic determinants of their adoption such as the costs of implementation of practices • To assess soil carbon stocks at different spatial scales: measurement networks, long-term monitoring systems, modelling tools • Identify the possible sharing of knowledge and tools between territories, as well as their generality and specificity • Evaluate the effect of land use changes/maintenance on soil carbon stocks and their socio-economic conditions of implementation • Evaluate the effect of changes/maintenance of agricultural and forestry practices on soil carbon stocks and their socio-economic conditions of implementation • Evaluate the current evolution of soil carbon stocks for each of the 7 territories • Analyse how to transpose the methods developed within the framework of the Low Carbon Label to the Overseas Territories • Report the results of the previous activities during a workshop gathering the 7 territories • Write and distribute a technical and scientific synthesis • Elaborate and disseminate sharing and popularization supports
Innovative aspect	Regional and trans-regional expertise around soil carbon stocks is built and shared, ensuring both innovative techniques oriented towards climate-adaptability of agriculture as well as safeguarding and sharing of knowledge around the thematic.
Transferability	The project involves knowledge sharing between different geographical territories, which highlights that its structure and organisation is set up to allow for the transferability of knowledge and practices.

5.2.2.2. Climate adaptation and risk management in coastal areas

Initiative 1: RenovRisk-Cyclones	
Website	RenovRisk-Cyclones.[16]
Geographical scope	Mayotte, La Réunion. Madagascar, Mauritius, Seychelles, Mozambique
Stakeholders involved	**Lead Partners:** University of La Réunion **Partners:** Météo France, CNRS, meteorological and university institutions in Madagascar, Seychelles, Mauritius and Mozambique.

[16] 3 other projects are linked: ReNovRisk-Erosion, ReNovRisk-Transferts and ReNovRisk-Impacts, which could also be presented together.

Relevance	The "ReNovRisk-Cyclones" project aims to improve modelling tools and knowledge of tropical cyclones on the islands of the south-west Indian Ocean (SWIO). It focuses on the current and future meteorological and oceanographic impact of cyclones. The aim is to better understand the cyclone phenomenon and its hazards in order to make populations and territories in the SWIO less vulnerable to cyclones and climate change.
Impacts and results	Activities of the project include: • Deployment of new measurement tools and satellite observations • Development of a digital model for the analysis of cyclones and cyclonic rainfalls • Estimation and evaluation of the impact of climate change on future cyclones and development of climatological analysis tools common to the project partners
Innovative aspect	The project was formed to assess the impact of climate change on cyclones in order to improve existing cyclone forecasting and observation tools in the South-West Indian Ocean. This project is also intertwined with three other relevant projects (on erosion, impacts and knowledge transfer).
Transferability	The project is developing models which can be used by relevant stakeholders in the basin to sharpen their understanding of how cyclones and their effects might change in the future. The project has also made possible the training of staff, students and a new generation of researchers in the fields of climatology, cyclone forecasting and experimental meteorology.

Initiative 2: PALM	
Website	PALM
Geographical scope	Madagascar, La Réunion
Stakeholders involved	**Lead partner**: La Réunion region **Partner:** city of Morondava, Madagascar.
Relevance	The project fosters integrated and sustainable development of the coastal area of the Morondava Urban Community (MUC) in Madagascar in the face of climate change
Impacts and results	This project consists of implementing two inseparable operations to combat coastal erosion, marine submersion and flooding in the town of Morondava: • intervening on the coastal part to fight against the effects of the wind and to fix the sand of the dunes through flexible defences associating civil and vegetal engineering • to restore the hydrographic network of the upstream catchment area by cleaning and mowing, which plays a role in stabilising the coast. This network provides the dune belt with sediments while limiting the impact of flooding.

	In addition, accompanying measures are envisaged (environmental education programme, Geographic Information System, mobilisation of local stakeholders, etc.) in order to ensure that this approach is responsible, participatory and sustainable.
Innovative aspect	This project is a cooperation programme between La Réunion and Madagascar which aims to make Morondava a city resilient to the impacts of climate change (coastal erosion, marine submersion, flooding, frequent and increasingly violent cyclones, etc.).
Transferability	Knowledge sharing and lesson learned from this concrete projects can be shared with other cities and territories that face similar challenges to put in place adaptation measures.

Initiative 3 : LESELAM	
Website	LESELAM
Geographical scope	Mayotte
Stakeholders involved	**Lead Partner:** BRGM **Partners:** Les Naturalistes de Mayotte, EPFAM (Etablissement Public Foncier et d'Aménagement de Mayotte), CEA
Relevance	The aim of this project is twofold: to understand the phenomena causing soil erosion, and to raise awareness of the problem among the population, elected officials and associations and thus encourage the adoption of techniques to limit soil losses, in both urban and agricultural areas. Its purpose is to protect the Mayotte lagoon, one of the only ones in the world with a double reef barrier.
Impacts and results	Achievements of the project include: • the establishment of an Erosion observatory in three catchment areas • the production of three Good Practices Guidebook (Agriculture, Urban and Ravine) • Work to raise awareness among the populations and farmers • A prospective analysis with workshops to discuss possible scenarios for 2035/
Innovative aspect	The LESELAM project links a scientific tool, i.e., a monitoring observatory, the modelling tools developed at BRGM (Watersed) and socio-economic analyses in a prospective work intended to make recommendations for decision-makers who have to introduce measures and regulations to prevent the silting up of the Mayotte lagoon
Transferability	The project produced good practices guidebooks which can be useful for many stakeholders.

Initiative 4: BRIO	
Website	BRIO
Geographical scope	La Réunion, Madagascar, Comores, Maurice, Seychelles
Stakeholders involved	**Lead Partner:** Indian Ocean Commission
Relevance	This project developed high-resolution climate projections that will describe the region's climate up to the year 2100. This way, the climate model will provide long-term trends in temperature, rainfall and cyclone activity in the region. It will be a valuable aid to governments in understanding the implications of climate change for human and animal health, food security, water supplies, soil erosion and natural hazards.
Impacts and results	Activities of the project include: • Training of climate experts from partner countries in the use of data sets from all available simulations in the region • Production of a set of future climate data sets from available global and/or regional climate simulations, allowing for a better estimation of the expected impacts on climate-sensitive sectors of activity. • Making all data available to use on a dedicated portal • Organization of users' forum to allow users to exploit the results for multidisciplinary purposes according to their main vulnerabilities to climate change.
Innovative aspect	In addition to providing data for policy makers to enhance capacities when facing climate hazards, the project strives to build bridges between sectors, involving e.g. agricultural, sanitary, energy, hydrological and other environmental applications.
Transferability	The results and methods of the project encompass multiple geographic areas and the lessons learned can be share with other countries of the Basin.

Initiative 5: PIROI	
Website	PIROI
Geographical scope	La Réunion, Mayotte, Madagascar, Mauritius, Tanzania, Mozambique, Seychelles
Stakeholders involved	**Lead Partner:** French Red Cross **Partners:** Comorian Red Crescent, Malagasy Red Cross, Mauritius Red Cross, Mozambique Red Cross, Seychelles Red Cross, Tanzania Red Cross, International Federation of Red Cross and Red Crescent Societies (IFRC) and the International Committee of the Red Cross (ICRC)

Relevance	This project aims to reduce the impact of natural and health disasters, as well as the foreseeable effects of climate change on south-west Indian Ocean populations.
Impacts and results	Results of the projects include: • Capacity building to respond to emergency: 120t of humanitarian equipment delivered and 40.000 potential beneficiaries. • Emergency operations: for cyclones in Mozambique and Madagascar, for volcanic eruption in Congo and for wildfire in La Réunion. • Reparation of disasters: development of local plans and strategies, simulation exercises, trainings. • Training and Learning: seminars, projects, trainings, • Awareness raising: about 60.000 people educated about disaster risks, events organised.
Innovative aspect	The project follows an integrated approach to crisis preparedness to ensure that the basic needs of Indian Ocean basin populations exposed to natural hazards and the effects of climate change and met effectively.
Transferability	The project builds on its transnationality to adapt initiatives and solutions to regions and their needs. It has the potential to bring knowledge of good practices applicable to other communities.

5.2.3. Macaronesia

5.2.3.1. Resilience towards extreme weather changes (temperature and precipitation changes; extreme weather events and human safety

Initiative 1: CLIMA-RISK	
Website	https://www.clima-risk.com/
Geographical scope	Canary Islands
Stakeholders involved	**Lead partner:** Instituto Tecnológico de Canarias, https://www.itccanarias.org/web/en/contacto-2 **Partners:** World Food Programme, Universidad de Las Palmas de Gran Canaria, Centro de Cooperación con África de Cruz Roja, Secrétariat Exércutif du Conseil National de Securite Alimentaire (Senegal), National Service of Civil Protection and Fireguards of Cabo Verde, Commissariat à la Sécurité Alimentaire (Mauritania), Oficina Técnica de Cooperación de Mauritania (AECID), Oficina Técnica de Cooperación de Cabo Verde (AECID), Oficina Técnica de Cooperación de Senegal (AECID)
Fund involved	ERDF (Interreg)
Relevance	The project is cross-cutting in nature, bringing together the expertise of the Red Cross (in the Canary Islands, Mauritania and Senegal) and the technical

	experience and capacity of two Canary Island entities to develop studies and technology to assure the resilience to the effects of climate change and improve capacities to respond to natural disasters.
Impacts and results	The project's aims were: • Development of studies and ICT tools for strategic territorial planning. • Ensure the resilience of the areas involved to the effects of climate change. • Development of technological solutions and prototypes to ensure the security and supply of energy, food and water in the event of natural disasters caused by extreme weather events.
Innovative aspect	The project is innovative in its widespread, collaborative nature, capitalising on an exceptionally well-placed actor in the field of risk prevention and management, the Red Cross and its cooperation with the Spanish embassies in the three countries concerned and two Canary Island entities experienced in the topic.
Transferability	The scale of the project would confer transferability, with a multiplier effect bestowed upon the actions implemented in the project framework by the participation of the Red Cross.

Initiative 2: ClimAdaPT.Local - Municipal Strategies for Adaptation to Climate Change	
Website	https://www.adapt-local.pt/
Geographical scope	Azores, Madeira
Stakeholders involved	**Lead partner:** FFCUL - Foundation of the Faculty of Sciences-Lisbon University **Partners:** CEDRU – Centro de Estudos e Desenvolvimento Regional e Urbano, Laboratório da Paisagem (Guimarães), Município de Cascais, Município da Figueira da Foz, Município de Loulé, Município de Sintra, Município de Torres Vedras, WE CONSULTANTS
Fund involved	European Economic Area Grants
Relevance	The project set out with the main objective of "improving the capacity of Portuguese municipalities to incorporate adaptation to climate change into their planning instruments and local interventions", with particular relevance to local action on adaptation as highlighted by the National Adaptation Strategy.
Impacts and results	The project activities included: • An initial focus on 26 municipalities but later extended to other municipalities and regional entities, elaborating on 27 Local Adaptation Strategies via municipal officers and their involvement in various training sessions. • Production of guidelines and manuals, alongside the establishment of a helpdesk to support aforementioned officers.

	• Creation of a Network of Municipalities for Local Adaptation to Climate Change in Portugal, with 30 signatories of Municipal Councils to foster local action.
Innovative aspect	The project can be deemed as innovative in its utilisation of the National Adaptation Strategy to focus on a key issue, and in its widespread collaborative and capacity-building nature.
Transferability	The project has excellent transferability, given that the production of educational materials and the creation of a specific network to support implicated actors both act to provide a wealth of information on the project and act as a best practice for capacity building.

Initiative 3: ACLIEMAC - Adaptación al Cambio Climático de los Sistemas Energéticos de la Macaronesia (Adaptation to Climate Change of Macaronesia's Energy Systems)	
Website	https://www.acliemac.com/es/
Geographical scope	Canary Islands, Azores, Madeira, Cape Verde, Mauritania, Senegal
Stakeholders involved	**Lead partner**: Instituto Tecnológico de Canarias **Partners**: Universidad de Las Palmas de Gran Canaria, Universidad de la Laguna, Agência Regional da Energia e Ambiente da Região Autónoma da Madeira, Centro de Informaçao e Vigilância Sismovulcânica dos Açores, Gobierno de Canarias, Colegio Oficial de Ingenieros Industriales de Canarias Oriental, Ben Magec-Ecologistas en Acción, Federación Canaria de Municipios, Consejo Insular de la Energía de Gran Canaria, Agence pour l'Economie et la Maîtrise de l'Energie de Senegal, Universidad de Nuakchot, Universidad de Cabo Verde
Funds involved	ERDF (Interreg)
Relevance	The ACLIEMAC project aims to find solutions for adaptation to climate change in regions with weak energy systems by promoting their energy autonomy and independence.
Impacts and results	The project aims to: • Diagnose the current energy model and study the risks and their mitigation concerning energy infrastructure. • The distribution of generation, self-consumption, and energy storage systems as climate change adaptation measures. • Adapt electricity infrastructure to climate change. • Development of energy recovery from organic fractions of waste as an adaptive measure to climate change. • Develop marine renewable energies as an adaptive measure to climate change. • Enhance renewable energy and energy efficiency as an adaptive measure to climate change.

Innovative aspect	The project is bringing together all three of the relevant Outermost Regions of the Macaronesia basin, as well as several third countries, to develop climate change adaptation measures in areas with weak energy systems and to promote the energy autonomy of these regions.
Transferability	The project counts 13 partners encompassing agencies, institutes, universities, etc. from across the Macaronesia basin with specific objectives concerning the resilience and independence of energy infrastructures; the widespread and multi-faceted approach will confer a high level of transferability to the project activities.

Initiative 4: Actuaciones de cambio climàtico: Biodiversidad (Climate Change Actions: Biodiversity) IC0501010212070001	
Website	https://kohesio.ec.europa.eu/en/projects/Q3224665
Geographical scope	Canary Islands
Stakeholders involved	Lead partner: Director General de Protección de la Naturaleza
Funds involved	ERDF
Relevance	The project set out to promote climate change adaption measures and the management of climate related risks, such as erosion, fires, flooding, storms and drought. This included the raising of awareness, civil protection and disaster management systems and infrastructures.
Impacts and results	Activities of the project included: • Assessment of climatic scenarios, their impacts, and the vulnerabilities of sectors to climate change, in regard to systems and priority resources of the Canary Islands. • Using these scenarios to elaborate on potential climate adaptation measures and incorporate them into sectoral plans and programs. • Done so in relation to the National Adaptation Plan and its requirement for impact assessments and subsequent adaptation measures in the island territories.
Innovative aspect	The project used evaluation methods and models according to those included as part of the National Adaptation Plan, with specific application to the Canary islands, in order to assess risks and vulnerabilities and subsequently account for them in climate adaptation measures.
Transferability	Lessons learned from this project could benefit other regions in the Macaronesia basin by demonstrating the value of developing climate scenarios for identifying risks and possible adaptation measures, and to refer to National Adaptation Plans for resources.

Initiative 5: AZMONIRISK.I – Monitoring of Risk Zones in the Azores (Monitorizações de Zonas de Risco dos Açores)	
Website	https://portal.azores.gov.pt/web/sraac/acores-05-1708-feder-000017
Geographical scope	Azores
Stakeholders involved	**Project leader**: Governo Regional dos Açores
Funds involved	ERDF
Relevance	The project sets out to monitor the situation of zones that are known to have high levels of risks to the safety of people and property, being inhabited areas with high geomorphological sensitivity and fragility.
Impacts and results	The project ambitions were: • Increase the training of public officials in matters relating to the prevention, detection and combatting of the effects of climate change. • Improve the monitoring and prevention systems to support efforts to increase climate change resilience. • Enhance awareness, communication, cooperation and dissemination in relation to climate change adaptation.
Innovative aspect	The identification of sites that have geomorphological vulnerabilities supports the decision-making involved in land-use planning and allow for due consideration of emergency planning, contributing to mitigating risks posed by extreme weather events.
Transferability	The improved monitoring and prevention systems developed in this project could be applied to similar settings in other regions of the Macaronesia basin. Furthermore, the increased capacity building of public officials to foresee and prevent climate change effects can have valuable applications to other contexts.

5.2.3.2. Risks and opportunities from climate change and climate adaptation for the tourism sector

Initiative 1: SOCLIMPACT - DownScaling CLImate imPACTs and decarbonisation pathways in EU islands, and enhancing socioeconomic and non-market evaluation of Climate Change for Europe, for 2050 and Beyond	
Website	https://soclimpact.net/
Geographical scope	Canary Islands, Azores, Madeira, Régions Ultrapériphériques Françaises

Stakeholders involved	**Lead partner**: Universidad de Las Palmas De Gran Canaria, **Partners**: Instituto Tecnologico De Canarias, S.A., Universitat De Les Illes Balears, Centro Tecnologico De Ciencias Marinas, Universidad De Castilla - La Mancha, Creativica, Gesellschaft Fuer Wirtschaftliche Strukturforschung Mbh, Tourisme Territoires Transports, Environnement Conseil, Ramboll France Sas, Agencia Regional Da Energia E ambiente Da Regiao Autonoma Da Madeira, The Cyprus Institute, Ethniko Asteroskopeio Athinon, Osservatorio Turistico Delle Isole Europee, Anci Sardegna, Aquabiotech Limited Malta, Interfusion Services Limited, Cyprus, Agenzia Nazionale per le Nuove Tecnologie, l'Energia e lo Sviluppo Economico Sostenibile, Italy Universite des Antilles, France, E3-Modelling AE, Greece, Baltic Environmental Forum Deutschland EV, Germany, Alma Mater Studiorum - Universita' di Bologna, Italy, Fondazione Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy, Fciencias.Id - Associacao Para A Investigacao E Desenvolvimento De Ciencias, Portugal, Johann Wolfgang Goethe-Universitatfrankfurt Am Main, Germany KRITI, Greece.
Funds involved	Horizon 2020 3.5.1 100%
Relevance	The project set out to model climate change effects and socioeconomic impacts for European islands 2030-2100, in the context of EU Blue Economy sectors (the largest of which is tourism), assessing corresponding decarbonisation and adaptation pathways, to complement current available projections for Europe and economic models with non-market assessment.
Impacts and results	The project aimed to: • Develop an understanding of how climate change will impact EU islands, considering their specific vulnerability, and improve climate impact models. • Improve economic valuation of climate impacts and related policies for EU Blue Economy sectors through analysis of non-market costs and benefits of climate adaptation actions. • Facilitate climate-related policy decision making for Blue Growth. • Use support tools and accurate information to inform policy makers and stakeholders on the environmental and socio-economic consequences of global climate change.
Innovative aspect	The project set out to deliver innovative decision-making support tools to incentivise the carbon transition of EU islands and contribute to the competitiveness of EU coastal and maritime industry (with tourism the largest Blue Economy EU sector).
Transferability	The project should have valuable transferability, having encompassed not only the Macaronesia region but also other EU islands located both within Europe as well as in different regions in the world. This would therefore allow for transferable potential, to apply to other island contexts.

Initiative 2: Masdunas	
Website	https://masdunas.es/
Geographical scope	Canary Islands

Stakeholders involved	**Lead partner:** Cabildo de Gran Canaria **Partners:** Natura 2000
Funds involved	Cabildo de Gran Canaria
Relevance	The project concerns the halting of further environmental degradation of a significant habitat, the Maspalomas Dunes, as a result of unregulated use of its resources, with the intention of preserving its environmental values, including that as an important tourist attraction.
Impacts and results	The project activities included: • Avoid the disappearance of the mobile dune field, checking the efficiency of measures preventing sand loss. • Study efficiency of sand collectors and sandbanks associated with these structures in dune generation and regulation of inland sand transport. • Increase population of *Traganum* plants that have disappeared from the Maspalomas beach, and eradicate or control invasive species in order to preserve native species and ecosystems. • Improve public use with adequate signage encouraging compliance with rules of the protected area.
Innovative aspect	The project aims to reverse the degradation of, thus preserve the natural heritage of a significant site, via conservation studies and public awareness. This is to ensure the sites long-term conservation and their function as a popular tourist attraction.
Transferability	The methods of engagement of public could have transferable applications for similarly affected natural areas elsewhere in the region that are also of touristic significance.

Initiative 3: ECOS MACHICO - Desenvolvimento e Sustentabilidade Territorial/Territorial Development and Sustainability	
Website	https://www.ecosmachico.pt/
Geographical scope	Madeira
Stakeholders involved	Municipality of Machico, Associação Insular de Geografia (Insular Association of Geography)
Funds involved	European agricultural fund for rural development (EAFRD)
Relevance	Combines knowledge and innovation in response to demands for territorial sustainability, for “Ecosystem Sites”, sites of geological, biological, historical, and cultural interest, and therefore of touristic interest. Done so via a monitoring system to provide for official territorial planning instruments, allowing for a greater understanding of impacts, adaptation, and mitigation measures to be adopted in the decision-making process.

Impacts and results	Provision of new resources and services focused on sustainability, implementing a strategy of territorial marketing based on valorisation of the municipality's natural and cultural heritage. Reinforce local economies with the availability of sustainably resourced services and the valorisation of the green economy. Development of a territorial monitoring system, the raising of responsibility and awareness to promote environmentally friendly behaviours and a system of certification for the Ecosystem Sites.
Innovative aspect	The project is innovative in the engagement of an NGO with a local municipality of a relatively small size, resources and means. Also, in its community focus, which fosters the emotional and identity connection of the municipality population with the Ecosystem Sites.
Transferability	High level of transferability, due to the visibility of sustainability and climate change themes. The innovative engagement of an NGO with a small municipality also holds lessons for similarly sized and equipped municipalities in other contexts.

Initiative 4: Nauticom - Red Náutica de Cooperación en la Macaronesia. Fomento de la internacionalización, la competitividad turística y el Crecimiento Azul de la Macroregión MAC/ Nautical Cooperation Network in Macaronesia. Promotion of the internationalisation, tourism competitiveness and Blue Growth of the MAC Macroregion.	
Website	https://www.proyectonauticom.com/
Geographical scope	Canary Islands, Azores, Madeira, Cape Verde, Mauritania
Stakeholders involved	**Lead partner:** CENTRO TECNOLÓGICO DE CIENCIAS MARINAS (CETECIMA) **Partners:** Regional Directorate of Sea Matters (PT). Regional Secretary for the Environment and Natural Resources (PT). Regional Agency for the Development of Research, Technology and Innovation (PT). Management of the Rural Environment of the Canary Islands, SAU (ES). General Directorate of Fisheries. Ministry of Agriculture, Livestock, Fisheries and Water Government of the Canary Islands (ES). Dublin Institute Of Technology, School of Transport Engineering, Environment and Planning (IR). Regional Directorate of Fisheries (PT)
Funds involved	ERDF (Interreg)
Relevance	The project set out to create the conditions for sports marinas and small nautical companies in the regions, leading a process of business renewal, based on internationalisation, business cooperation and innovation, in the tourism sector.
Impacts and results	The project's aims were: • Promote strategic alliances between sports marinas and nautical companies, through the establishment of a supra-regional MAC NETWORK, allowing the use of capacities and value creation.

	• Consolidate an image of international nautical tourism of the Macaronesia region. • Promote smart specialisation and eco-innovation in the tourism sector and the valorisation of services and improvement of individual and Macro-region competitiveness.
Innovative aspect	The project adopted an innovative and holistic approach in bringing together industry from across the region, in order to develop interregional strategic alliances and develop transnational products and an image of the tourism sector, with a focus on eco-innovation in the sector.
Transferability	The establishment of the NAUTICOM Network demonstrates the transferability of the project, allowing for the exchange between businesses in the regions and promoting cooperation and innovation.

Initiative 5: CLIMAAT	
Website	http://www.climaat.angra.uac.pt/
Geographical scope	Canary Islands, Azores
Stakeholders involved	**Project leader**: Associação para o Estudo do Ambiente Insular **Partners:** Universidade dos Açores, Delegação Regional do Instituto Português do Mar e da Atmosfera (IPMA) nos Açores, Universidad de La Laguna, Universidad de Las Palmas de Gran Canaria, Centro de Geofísica da Universidade de Lisboa
Funds involved	ERDF
Relevance	The project aims to implement the scientific cooperation for the development of methodological studies of the meteorology and climate of island regions, with applications of information for climate product development, including for use by the tourism sector.
Impacts and results	The project ambitions were: • Compile and process relevant climate information and disseminate it for applied purposes. • Promote geostrategic position of island territories as platforms for climatology and meteorology. • Meteorological, oceanographic and local-scale climate modelling for island regions. • Development of a portal for the dissemination of the project results, including those that can be applied in sectors of activity (like tourism). • Improve the monitoring and prevention systems to support efforts to increase climate change resilience. • Enhance awareness, communication, cooperation, and dissemination in relation to climate change adaptation.

	• Observation, study, monitoring and exchange of atmospheric qualities of the island regions.
Innovative aspect	The project is innovative in its dual action of compiling relevant climate information and its further processing and dissemination for applied purposes, which include tourism, as well as for environment, agriculture, hydrology, fisheries, etc.
Transferability	The project has transferable lessons in the form of scientific cooperation for the development of methodologies that compile information for applied purposes, with myriad sectors for application.

Initiative 6: LIFE Dunas	
Website	https://lifedunas.madeira.gov.pt/
Geographical scope	Porto Santo (Madeira)
Stakeholders involved	**Coordinator:** Secretaria Regional de Ambiente, Recursos Naturais e Alterações Climáticas (SRAAC) **Partners:** Faculdade de Ciências da Universidade de Lisboa (FCUL); Secretaria Regional das Finanças - Administração Pública do Porto Santo; Câmara Municipal do Porto Santo; Instituto das Florestas e Conservação da Natureza, IP-RAM (IFCN); Secretaria Regional de Agricultura e Desenvolvimento Rural (SRA)
Funds involved	LIFE Program
Relevance	The project's main objective is to restore a substantial area of degraded dunes thus mitigating the effects of the rise in mean sea level, namely the erosive trend seen in Porto Santo in recent decades, through measures that add sedimentary resources to the coastal system, allowing it to become more resilient.
Impacts and results	The project activities include: • restoration of a substantial area of degraded dune cord, including geomorphological work, using sand from borrowed patches, without compromising coastal dynamics; • restoration of the dune ecosystem, based on the control of invasive species, which are one of the main threats to biodiversity causing impacts on the ecosystem, and the installation of a vegetation cover in the reconstituted zone and adjacent areas, selecting a set of species duly adapted to local conditions; • prevention of the impact that human pressure may have on the restored areas and creating a walkway in order to significantly reduce that pressure; • promotion of traditional viticulture at the back of the dune, as well as the recovery of the typical “crochet” walls, contributing to improve resilience, mitigating wind erosion losses, and having a strong positive impact on the local landscape quality;

	• environmental awareness activities, with the regular involvement of the resident and visiting population and the various civil society organizations, with active volunteering events; • replication of the project and the transferability of results in local and external areas;
Innovative aspect	Given the high vulnerability of island regions to climate change, this project aims to increase the resilience of dune and beach ecosystems, unique in the Madeira archipelago, that constitute dynamic natural barriers that prevent the sea from advancing on the territory, protecting it from erosion processes, while also ensuring that they remain a sustainable tourist attraction which has a strong economic impact for the island.
Transferability	The project will focus on a specific area of the beach in Calheta, and its effectiveness will be evaluated so that it can be replicated on other parts of the Porto Santo beach and on other areas of the EU.

Initiative 7: Life IP Azores Natura	
The project acts to raise the awareness of local population, stakeholders and agents to the conservation values of the Natura 2000 network and its value of an instrument in sustainable development.	
Workshop featured in	3rd Workshop in the Macaronesia Basin: Solutions and mitigation measures regarding biodiversity loss caused by climate change
Website	https://www.lifeazoresnatura.eu/es/
Geographical scope	Azores
Funding source	LIFE
Stakeholders involved	**Lead partner:** Regional Secretariat for the Environment and Climate Change **Partners:**
Relevance	The project sets out to improve the conservation status of the habitats and species encompassed by the Natura 2000 Network in the Azores, via habitat improvement, tackling invasive species, collecting seeds of endemic species, developing technical capacities, and raising awareness. These actions are of direct relevance to climate changing planning of public policies, in increasing the resilience of the targeted habitats and species to climate change risks.
Impacts and results	The project encompasses actions that include the restoration and conservation of terrestrial, coastal and marine habitats, the promotion of extensive capacity building,

	and the improvement of integrating conservation efforts with agriculture, tourism, fisheries and marine transport. Given the specific climatic threats facing the Azores and its wildlife, these efforts will act to buffer future negative impacts of climate change on key species and habitats in the islands.
Innovative aspect	The holistic and ambitious range of the project is innovative, in its targeting of vulnerable habitats and species covered by the Natura 2000 network. It deploys multiple actions to address myriad considerations of biodiversity conservation, including cross-cutting actions addressing water and ocean legislation, as well as, crucially, regional programmes on climate change.
Transferability	The project has transferable value in its cross-cutting nature, demonstrating how protecting biodiversity from climate change threats in other contexts can incorporate multiple legislative objectives at the EU level applied to the local and regional level.

5.3. Annex III. Minutes of the nine workshops

5.3.1. 1st Workshop in the Caribbean-Amazonia Basin: Climate change adaptation to extreme weather events and coastal resilience

15 September 2022, online

Agenda

Time			Description
GMT-4	GMT-3	CEST	
8:30-9:00	9:30-10:00	14:30-15:00	Connection time for participants.
9:00-9:05	10:00-9:05	15:00-15:05	**Welcome** *Moderator:* ***Giuseppe Sciacca****, Director for Maritime Affairs and Climate, CPMR*
9:05-9:15	10:05-10:15	15:05-15:15	**Opening by the European Commission** ❖ ***Paula Duarte Gaspar****, Head of the Outermost Regions Unit, DG REGIO.* ❖ ***Willem-Jan Goossen****, Policy Officer in the unit in charge of climate change adaptation and resilience, DG CLIMA.*
9:15-9:25	10:15-10:25	15:15-15:25	**Welcoming words by the co-hosting regions** ❖ ***David Zobda****, Executive Advisor in charge of planning, sustainable development, transport and energy transition at the Territorial Collectivity of Martinique.*

			❖ ***Martine Beldor**, Territorial councilor in charge of European affairs, Saint-Martin*
9:25-9:35	10:25-10:35	15:25-15:35	**Introductory presentation on the workshop's theme** *Moderator*
9:35-10:25	10:35-11:25	15:35-16:25	**Presentation of relevant initiatives** ❖ **CARIB-COAST** *Yann Balouin, project coordinator, BRGM (20mins.)* Q&A *(5mins.)* ❖ **READY TOGETHER** *Maëlle Marblé, programme manager, PIRAC (20mins.)* Q&A *(5mins.)*
10:25-10:40	11:25-11:40	16:25-16:40	**Break**
10:40-12:10	11:40-13:10	16:40-18:10	**Panel discussion on additional solutions and cross cutting issues** ❖ ***Ywenn de la Torre**, Director BRGM Guadeloupe* ❖ ***Maëlle Marblé**, READY TOGETHER programme manager, PIRAC* ❖ ***Dr. Mark Bynoe**, Assistant Executive Director, Caribbean Community Climate Change Centre (CCCCC)* ❖ Q&A (30 *mins.)* & Polls
12:10-13:30	13:10-14:30	18:10-18:30	**Conclusions and next steps** ❖ *Moderator* ❖ ***David Zobda**, Executive Advisor in charge of planning, sustainable development, transport and energy transition at the Territorial Collectivity of Martinique.* ❖ ***Martine Beldor**, Territorial councilor in charge of European affairs, Saint-Martin.* ❖ ***Paula Duarte Gaspar**, Head of the Outermost Regions Unit, DG REGIO, European Commission.*

Key takeaways and lesson learned

Findings

- Added value of regional cooperation and cooperation with neighbouring third countries in the Caribbean-Amazon basin, particularly in the framework of the Interreg programme, through the pooling of resources and the implementation of complementary actions;

- Importance of political will and the issue of financing adaptation and mitigation actions (public and private);

- Importance of raising awareness among the general public and businesses and adapting messages to target audiences (taking into account the specific vulnerabilities of certain people in collective prevention measures);

- Importance of sharing lessons learned from previous projects/initiatives to learn from past mistakes and be aware of measures that do not work;

Ways forward

- Understand the climate impacts faced by the territories: need for reliable scientific data;

- Mapping existing projects to avoid duplication of initiatives and resources;

- Promote nature-based solutions and the use of new technologies (e.g. mobile applications) in crisis management to facilitate access to information, especially for isolated/remote people;

- Investing in education and awareness raising of children as vectors of information and future citizens directly confronted with these issues;

- To follow a logic of sustainable development and the setting up of adapted infrastructures, through a holistic approach;

- Take into account the resistance linked to the potential abandonment of assets and changes in lifestyle.

5.3.2. 2nd workshop in the Caribbean-Amazon basin: resilient agricultural practices for climate change adaptation

10 November 2022, online workshop

Agenda

Time			Description
GMT-4	GMT-3	CEST	
9:30-10:00	10:30-11:00	14:30-15:00	Connecting participants
10:00-10:05	11:00-11:05	15:00-15:05	**Introduction** *Moderator: **Nidaa Botmi**, Project Officer - Islands Commission, Conference of Peripheral Maritime Regions (CPMR)*
10:05-10:15	11:05-11:15	15:05-15:15	**Opening by the European Commission** ❖ ***Germán Esteban**, Deputy Head of the Outermost Regions Unit, REGIO*
10:15-10:20	11:15-11:20	15:15-15:20	**Welcome from the host region** ❖ ***Patrick Dollin**, President of the Green Economy Commission of the Guadeloupe Region*
10:20-10:30	11:20-11:30	15:20-15:30	**Setting the context of the workshop theme** *Moderator*
10:30-11:55	11:30-12:55	15:30-16:55	**Presentation of relevant initiatives** ❖ **ARTIMIX** *Nadine Andrieu, CIRAD* Q&A ❖ **CAMBIO-NET** *Harry Ozier-Lafontaine, Research Director, International Relations Officer, Caribbean, Central America, Mexico, Guiana Shield, Florida, DRI INRAE - UMA-RI INRAE-Cirad (20mins.)* Q&A ❖ **TransformAr** *Marie-Edith Vincennes, Research Project Manager, ADEME Guadeloupe (20mins)*
11:55-12:10	12:55-13:10	16:55-17:10	***Break***
12:10-13:25	13:10-14:25	17:10-18:25	**Group discussion on alternative solutions and cross-cutting issues** ❖ ***Nadine Andrieu**, ARTIMIX project, CIRAD*

			❖ *Harry Ozier-Lafontaine, CAMBIO-NET project, Research Director, INRAE* ❖ ***Marie-Edith Vincennes**, TransformAr project, research project manager, ADEME Guadeloupe* ❖ ***Frank Enjalric**, National RITA Co-animator CIRAD-DGDRD* ❖ ***Manuel Gerard**, EURL EcoTip* ❖ *Q&A (30min) & surveys*
13:25-13:40	14:25-14:40	18:25-18:40	**Conclusions and next steps** ❖ *Moderator* ❖ ***Patrick Dollin**, President of the Green Economy Commission of the Guadeloupe Region.* ❖ ***Germán Esteban**, Deputy Head of the Outermost Regions Unit, DG REGIO*

Key takeaways and lessons learned

Findings

- Coordination between different levels (local, regional, national, transnational) is a necessary precondition for climate change adaptation policies.
- Linking researchers and policy makers helps to develop evidence-based public policies and to keep policy makers informed of the evolving effects of climate change.
- Living laboratories" represent an opportunity to create dynamics and multi-actor learning communities for action.
- While funding is available, there are issues of accessibility, targeting and complementarity between the schemes.

Ways forward

- Improve anticipation of environmental disasters through dedicated public policies to increase farmers' resilience.
- Increase the level of cooperation at regional level by involving local authorities.
- Design climate change adaptation policies by involving members of civil society and from a multi-sectoral perspective, in order to avoid "silo" thinking.
- Strengthen the support and protection of farmers through accessible financial aid and tailored support on the ground, paying particular attention to the good complementarity of the schemes between them.

5.3.3. 3rd Workshop in the Caribbean-Amazonia Basin: Solutions to protect and preserve biodiversity from the impacts of climate change

30 March 2023, online workshop

Agenda

Time			Description
GMT-4	GMT-3	CEST	
8:30-9:00	9:30-10:00	14:30-15:00	Connecting participants
9:00-9:05	10:00-10:05	15:00-15:05	**Welcome by the moderator** Moderator: **Lise Guennal**, *Chargée de projets et politiques senior, Commission des îles de la CRPM*
9:05-9:15	10:05-10:15	15:05-15:15	**Welcome words from the European Commission** • **Katherine Fournier-Leroux,** *Coordinatrice des politiques, Direction générale de la politique régionale et urbaine, DG REGIO* • **Leonardo Mazza**, *Chargé de mission, unité "Capital naturel et santé des écosystèmes", DG ENV*
9:15-9:20	10:15-10:20	15:15-15:20	**Welcome words from the hosting region** • **Thibault Lechat-Vega**, *3e vice-président de la Collectivité Territoriale de Guyane en charge des affaires européennes*
9:20-9:25	10:20-10:25	15:20-15:25	**Setting the context of the workshop theme** Moderator
9:25-10:25	10:25-11:25	15:25-16:25	**Presentation of relevant initiatives** • **Resilient Islands**, *Natainia Lummen, spécialiste senior des Solutions fondées sur la nature et de la résilience communautaire* • **LIFE intégré Artisan,** *Astrid Abel, Animatrice régionale "Solutions d'adaptation fondées sur la nature" Antilles-Guyane Direction des Outre-mer, Office Français de la Biodiversité* • **Projet Z'AB,** *Yannis Labeau, Chef de Projet Frange Littorale et Prévention des Inondations, CACEM* • **Life Adapto : Rizières de Mana,** *Alain Brondeau, Délégué Outre-Mer, Conservatoire du Littoral*

10:25-10:35	11:25-11:35	16:25-16:35	***Break***
10:35-11:50	11:35-12:50	16:35-17:50	**Group discussion on alternative solutions and cross-cutting issues Représentants des projets** • **Jean-Michel Zammite**, *Directeur des outre-mer, Office Français pour la Biodiversité (OFB)* • **Delphine Morin***, Coordinatrice de projet, LIFE BIODIV'OM* • **Alexandre Mathieu***, Chargé d'études scientifiques (GEPOG), LIFE BIODIV'OM*
11:50-12:00	12:50-13:00	17:50-18:00	**Conclusions**

Key takeaways and lessons learned

Findings

- Climate change is threatening the extraordinary biodiversity of this basin, even though it provides major ecosystem services (e.g., combating coastal erosion, carbon capture);
- In this context, nature-based solutions make it possible to mitigate the effects of climate change while preserving and restoring ecosystems;
- Stakeholders emphasise the need for training and the production of data on the protection of biodiversity, as well as the need to continue raising awareness of nature-based solutions among citizens and stakeholders.

Ways forward

- Pursue actions to adapt to climate change, in particular by conserving and restoring ecosystems through nature-based solutions;
- Encourage the dissemination and capitalisation of good practice and innovative approaches through peer exchanges at basin level, and step up the production of scientific data in order to deepen knowledge of ecosystems and their uses;
- To develop relevant partnerships and support for local stakeholders so that actions to preserve biodiversity can be implemented using a holistic approach involving all stakeholders.

5.3.4. 1st Workshop in the South-West Indian Ocean basin: solutions for adaptable and resilient agricultural systems and food security

5 October 2022 - Online Workshop

Agenda

Time			Description
CEST	GMT+	GMT+	
8:30-9:00	9:30-10:00	10:30-11:00	*Connection time for participants*
9:00-9:05	10:00-9:05	11:00-11:05	**Welcome** Moderator: ***Claudia Guzzon**, Executive Secretary of the Islands Commission, CPMR*
9:05-9:15	10:05-10:15	11:05-11:15	**Welcoming words by the European Commission** ❖ **Paula Duarte Gaspar**, *Head of unit, "Outermost regions" unit, DG REGIO* ❖ **Herwig Ranner**, *Team Leader Climate Change and agriculture, "Environmental Sustainability" Unit, DG AGRI*
9:15-9:25	10:15-10:25	11:15-11:25	**Introductory presentation on the workshop's theme** *Moderator*
9:25-10:30	10:25-11:30	11:25-12:30	**Presentation of relevant initiatives** ❖ **EpiBio-OI** *Eric Jeuffrault, Regional director, CIRAD* ❖ ***SUCASA*** *Tahina Raharison, Agroecology and socio-economist agronomist, GSDM* ❖ ***GCCA+ Climate Smart Agriculture*** *Sunita Facknath, Professor, Faculty of Agriculture, University of Mauritius and Project Coordinator* ❖ ***SeqCoi & 4 pour 1000 Outre-mer*** *Alain Albrecht, Project Coordinator and Indian Ocean Territorial Coordinator of Initiative 4 pour 1000 Outre-mer* ❖ *Q&A session*
10:30-10:40	11:30-11:40	12:30-12:40	***Break***
10:40-12:20	11:40-13:20	12:40-14:20	**Panel discussion on additional solutions / cross cutting issues** ❖ ***Eric Jeuffrault**, Regional director, CIRAD* ❖ ***Tahina Raharison**, Agroecology and socio-economist agronomist, GSDM* ❖ ***Sunita Facknath**, Professor, Faculty of Agriculture, University of Mauritius and Project Coordinator*

			❖ ***Alain Albrecht**, Project Coordinator and Indian Ocean Territorial Coordinator of Initiative 4 pour 1000 Outre-mer* ❖ ***Stéphane Allard**, Director, Mayotte Chamber of Agriculture, Fisheries and Aquaculture* ❖ ***Anaïs Marignol,** Ecological transition mission manager, ADEME Indian ocean* ❖ *Q&A session & Polls*
12:20-12:30	13:20-13:30	14:20-14:30	**Conclusions and next steps** ❖ ***Claudia Guzzon**, Executive Secretary of the Islands Commission, CPMR* ❖ **Katherine Fournier-Leroux**, *Policy coordinator, Directorate-General for Regional and Urban Policy, DG REGIO*

Key takeaways and lessons learned

Findings

- It is essential to use the data and knowledge generated by scientific research in support of policy makers to address the various issues, as well as to share as much knowledge and data as possible.
- There is a need to address sustainability from a holistic perspective, from an economic, environmental and social perspective.
- The participatory approach on these issues is important, through networking, coordination of work with the different stakeholders and capacity building of local actors, in particular by putting farmers at the heart of actions.
- Adapting to the context of any practice is a priority, given the specificities of these territories and their different level of advancement.

Ways forward

- Priority must be given to education, awareness and public information to develop solutions: Groups of scientists/researchers and planners could be pooled to study transferability and develop an integrated and coherent programme to mitigate the effects of climate change on the islands of the South West Indian Ocean.
- Addressing the lack (and quality) of water in island territories is crucial as it is a resource that is used and needed by all. The same applies to soil and seed quality.
- Access to quality equipment, adapted and resilient crops, incentives and context-specific financing mechanisms (for example for small family farming) This can be done by demonstrating what works on the ground to convince others to replicate good practices.
- The potential of the circular economy (reuse of waste) in the island context is also to be emphasized: it could strongly contribute to increase the resilience of the territories concerned. Local seed production also remains a priority in the region.

- The level of collaboration and synergy between actors can be further improved. However, it is more about improving communication and coordination between different levels of cooperation (as they often work differently).

5.3.5. 2nd Workshop of the South-West Indian Ocean Basin: Climate adaptation and risk management in coastal areas

6 October 2022 – Online workshop

Agenda

Time			Description
CEST	GMT+3	GMT+4	
8:30-9:00	9:30-10:00	10:30-11:00	*Connection time for participants*
9:00-9:05	10:00-9:05	11:00-11:05	**Welcome** Moderator: ***Francesco Catte,*** *Policy Analyst for Energy and Transport, CPMR*
9:05-9:15	10:05-10:15	11:05-11:15	**Welcoming words by the European Commission** ❖ **German Esteban**, *Deputy head of unit, "Outermost regions" unit, DG REGIO* ❖ **Evangeli Tsartsou**, *Policy officer "Prevention and Disaster Risk Management unit", DG ECHO*
9:15-9:20	10:15-10:20	11:15-11:20	**Welcoming words by the hosting region** ❖ **Bibi Chanfi**, *Vice-President of the Departmental Council of Mayotte in charge of economic development and international cooperation*
9:20-9:30	10:20-10:30	11:20-11:30	**Introductory presentation on the workshop's theme** *Moderator*
9:30-10:30	10:30-11:30	11:30-12:30	**Presentation of relevant initiatives** ❖ **RenovRisk-Cyclones** *Olivier Bousquet, Project coordinator, Météo-France* ❖ ***PIROI (Indian Ocean Regional Intervention Platform)*** *Zoé Trevisan, Disaster Risk Reduction Manager, PIROI* ❖ ***BRIO (Building Resilience in Indian Ocean)*** ***Emmanuel Thevenin****, Advisor Environment and Natural Resources, BRIO &* **Marie-Dominique LEROUX**, *Deputy Head, Division of Studies and Climatology, Météo-France* ❖ *Q&A session*
10:30-10:40	11:30-11:40	12:30-12:40	***Break***

10:40-12:15	11:40-13:15	12:40-14:15	**Panel discussion on additional solutions / cross cutting issues** ❖ **Olivier Bousquet,** *Project coordinator, MétéoFrance* ❖ **Zoé Trevisan,** *Disaster Risk Reduction Manager, PIROI* ❖ ***Emmanuel Thevenin**, Advisor Environment and Natural Resources, BRIO* ❖ **Marie-Dominique Leroux**, *Deputy Head, Division of Studies and Climatology, Météo-France* ❖ *Q&A session & Polls*
12:15-12:30	13:15-13:30	14:15-14:30	**Conclusions and next steps** ❖ ***Francesco Catte,** Policy Analyst for Energy and Transport, CPMR* ❖ **Bibi Chanfi**, *Vice-President of the Departmental Council of Mayotte in charge of economic development and international cooperation* ❖ **German Esteban**, *Deputy head of unit, "Outermost regions" unit, DG REGIO*

Key Takeaways and Lessons Learned

Findings

- The main issue is the urgency of taking action, as the effects of climate change are occurring faster than the decisions made to mitigate them. It is difficult for local governments to act on time and adapt the regulatory and economic environment to the needs of the territory.
- There is a need to change the mindset of local decision-makers to focus on long-term solutions, even if they may appear to be disadvantageous at the outset, preferring results-based policies and projects.
- Risk management must be recognized as a priority for local authorities in the region: this can be difficult when their populations are faced with difficulties to feed themselves or to have access to drinking water. The cost of inaction must be assessed and explained.
- There is a need for regional data on sea-level rise in the Indian Ocean basin. Much of the data on other relevant scientific aspects is often available, but it is important to focus on how to exploit them properly.

Ways forward

- It is important to promote nature-based solutions that help restore ecosystems and are cost-effective solutions, as well as the use of new technologies (for example, mobile applications) crisis management to facilitate access to information, especially for isolated/remote people;
- Interdisciplinary interventions at different levels must be promoted in order to follow an integrated approach: additional efforts must be made, particularly in terms of coordination and communication. This could be done through peer-to-peer exchanges and the sharing of innovative practices and solutions.

- Coordination also needs to be improved in the funding of projects/initiatives: funds are available to address the issue, but they need to be better coordinated in an integrated way for greater effectiveness. The complementarity of the actors involved is essential.
- Cooperation between islands/territories in the Indian Ocean should be encouraged, but there are still logistical/administrative challenges (transportation, air connectivity, visa access) that prevent face-to-face exchanges and meetings.
- Awareness, information dissemination and public participation are crucial, as are education, capacity building of local actors and private sector involvement.

5.3.6. 3rd Workshop in the South-West Indian Ocean Basin Adaptation of water management and protection of water resources from the effects of climate change

20 avril 2023, atelier en ligne

Agenda

Time			Description
CEST	**GMT+3**	**GMT+4**	
8:30-9:00	9:30-10:00	10:30-11:00	*Temps de connexion pour les participants*
9:00-9:05	10:00-10:05	11:00-11:05	**Mots de bienvenue de la modératrice** • **Claire Helly**, *Chargée de projets, Commission des îles de la CRPM*
9:05-9:10	10:05-10:10	11:05-11:10	**Mots de bienvenue de la Commission européenne** • **Katherine Fournier-Leroux**, *Coordinatrice des politiques, Direction générale de la politique régionale et urbaine, DG REGIO*
09:10-09:15	10:10-10:15	11:10-11:15	**Mots de bienvenue de la région hôte** • **Zamimou Ahamadi,** *5e Vice-présidente du Conseil Départemental de Mayotte, en charge des Finances et Affaires Européennes*
9:15-9:25	10:15-10:25	11:15-11:25	**Présentation introductive sur le thème de l'atelier** Modératrice
9:25-10:10	10:25-11:10	11:25-12:10	**Présentation d'initiatives pertinentes** • **Changement climatique et ressources en eaux souterraines,** *Bertrand Aunay, Chef de projet - Hydrogéologie et risques naturels, BRGM* • **'Ensuring climate resilient water supplies in the Comoros Islands',** *Seybou Mossi, Conseiller international du projet* • **SDAGE (Schéma directeur de l'eau de Mayotte),** *Guillaume Boisset, Chef d'unité Gouvernance et Suivi de la Ressource en Eau (SEPR/DEAL Mayotte) et Floriane Ben Hassen, Cheffe du centre météorologique de Mayotte, Météo France*
10:10-10:15	11:10-11:15	12:10-12:15	***Pause***
10:15-11:20	11:15-12:20	12:15-13:20	**Débat sur les solutions supplémentaires / les questions transversales** • **Représentants des projets** • **Gina Bonne**, *Chargée de mission, Commission de l'Océan Indien* • **Naïlane-Attoumane Attibou**, *Vice-président du Comité de l'eau et de la biodiversité, Mayotte*

11:20-11:30	12:20-11:30	13:20-13:30	**Conclusions et prochaines étapes**

Key points and lessons learned

Findings

- Climate change is adding a major challenge to the problems of water management in the islands of the Indian Ocean basin, which already have to adapt to topographical features and economic and demographic aspects. The observed shortening of the rainy season is having a serious impact on the availability of groundwater resources.
- In this context, solutions based on changes in behaviour, practical and innovative approaches that respect the environment and involve citizens, can enable better water management, particularly in terms of storage, catchment, supply and sanitation. A mix of water resources allows for better production of drinking water and a more secure supply.
- Stakeholders stress the need to produce data and research on the theme of water and climate change, including public health, and to continue raising awareness among citizens and sector players.

Ways forward

- Respond to the climate emergency by continuing research and projection of scenarios for adapting to climate change.
- Encourage the dissemination and capitalisation of innovative technical solutions adapted to the specific characteristics of the area through partnerships and knowledge-sharing platforms at basin level, and step up the production of scientific data in order to develop adaptation programmes and respond to emergency situations.
- To develop partnerships with all the stakeholders involved in water management in order to enable the establishment of integrated multi-actor governance and to promote the implementation of practical solutions tailored to the territories.
- Increase the use of available funds by improving financial engineering.

5.3.7. 1st Workshop in the Macaronesia Basin: Resilience towards extreme weather changes – Temperature and precipitation changes; Extreme weather events and human safety

October 26th, 2022, online

Agenda

Time			Description
GMT	GMT+1	CEST	
8:30-9:00	9:30-10:00	10:30-11:00	*Connection time for participants*
9:00-9:05	10:00-10:05	11:00-11:05	**Welcome** Moderator: **Heitor Gomes**, Assistant Director at CEDRU – Centre for Studies and Urban and Regional Development
9:05-9:15	10:05-10:15	11:05-11:15	**Opening by the European Commission** • **Paula Duarte Gaspar,** *Head of the Outermost Regions Unit, DG REGIO* • **Maria Brattemark**, *Team Leader on Prevention policy in the EU, DG ECHO*
9:15-9:20	10:15-10:20	11:15-11:20	**Welcome words by the hosting region** • **Ana Cristina Rodrigues,** *Regional Director of Environment and Climate Change of the Government of the Azores*
9:20-9:30	10:20-10:30	11:20-11:30	**Introductory presentation on the workshop's theme** *Moderator*
9:30-10:30	10:30-11:30	11:30-12:30	**Presentation of relevant initiatives** • **CLIMA-RISK** **Rayco Parra,** *member of the Renewable Energy Section of the Canary Islands Technological Institute (20 min.)* *Q&A (10 min.)* • **ACLIEMAC** **Santiago Díaz**, *member of the Renewable Energy Department of the Canary Islands Technological Institute and ACLIEMAC project technician (20 min.)* *Q&A (10 min.)*
10:30-10:40	11:30-11:40	12:30-12:40	**Break**

10:40-12:15	11:40-13:15	12:40-14:15	**Panel discussion on additional solutions / cross cutting issues** • **Rayco Parra,** *member of the Renewable Energy Section of the Canary Islands Technological Institute* • **Santiago Díaz**, *member of the Renewable Energy Department of the Canary Islands Technological Institute and ACLIEMAC project technician* • **João Dinis,** *Office Coordinator at EMAC - Municipal Environmental Company of Cascais* • **Prof. João Porteiro**, *Professor at the University of the Azores, Researcher at the PLANCLIMAC (MAC/3.5B/244)* • *Q&A*
12:15-12:30	13:15-13:30	14:15-14:30	**Conclusions** • **Heitor Gomes,** *Assistant Director at* CEDRU – Centre for Studies and Urban and Regional Development • **Germán Esteban,** *Deputy Head of the Outermost Regions Unit, DG REGIO* • **Ana Cristina Rodrigues,** *Regional Director of Environment and Climate Change of the Government of the Azores*

Key takeaways and lesson learned

Findings

- Awareness and knowledge of climate change-related matters are widespread. However, related and specific actions and behaviour changes are still lacking.
- Some discrepancies remain in the various scales of action regarding climate change adaptation.
- Adaptation capacity varies, depending on the economic sector and investment capacity of stakeholders.
- Contemporary themes may reduce the visibility of climate change, although its impacts are already noticeable.

Ways forward

- Mapping and sharing of all initiatives (successful and least successful), between all relevant stakeholders.
- Stressing the need for action towards climate change adaptation, highlighting the local dimension of actions, consequences and associated expectations

- Mainstreaming climate change adaptation through European funding, national, regional and local policies
- Adaptation and mitigation play essential roles in climate change, local communities should boost adaptation and ask for accountability on mitigation matters.
- Ensuring the adequacy of the language and communication according to the recipient of the message

5.3.8. 2nd Workshop in the Macaronesia Basin: Risks and opportunities from climate change and climate adaptation for the tourism sector

Thursday 27th October 2022, online

Agenda

Time			Description
GMT	**GMT+1**	**CEST**	
8:30-9:00	09:30-10:00	10:30-11:00	*Connection time for participants*
9:00-9:05	10:00-10:05	11:00-11:05	**Welcome** *by the moderator* **Nicoletta del Bufalo**, *Managing Director, Ecorys Spain*
9:05-09:15	10:05-10:15	11:05-11:15	**Welcome words by the European Commission** ❖ **Katherine Fournier-Leroux,** *Policy coordinator, Directorate-General for Regional and Urban Policy, DG REGIO* ❖ **Willem-Jan Goossen,** *Policy Officer in the unit in charge of climate change adaptation and resilience, DG CLIMA.*
9:15-09:25	10:15-10:25	11:15-11:25	**Welcome words by the hosting regions** ❖ **Pedro Sepúlveda,** *Director of Services of the Regional Directorate for the Environment and Climate Change of the Regional Secretariat for the Environment, Natural Resources and Climate Change- Madeira* ❖ **Gustavo Pestana,** *Head of Service, DG Climate Change and Environmental information – Canarias*
9:25-09:35	10:25-10:35	11:25-11:35	**Presentation of the thematic context** *Moderator*
09:35-10:35	10:35-11:35	11:35-12:35	**Presentation of relevant initiatives** ❖ **ECOS MACHICO,** *Development and Territorial Sustainability* - **Cláudio Nóbrega,** *Co-coordinator of the Ecos Machico project on the Municipality of Machico &* **Marco Teles**, *President of the Insular Geographic Association* ❖ **SOCLIMPACT**, *University Institute TIDES of the University of Las Palmas de Gran Canaria* - **Marcelo Mautone**, *Project manager* ❖ **NAUTICOM**, *Nautical Network of Cooperation in Macaronesia* – **Patricia Solinis,** *Project Manager, Technological Center of Marine Sciences (CETECIMA)* ❖ *Questions & Answers*
10:35-10:45	11:35-11:45	12:35-12:45	***Break***

10:45-12:15	11:45-13:15	12:45-14:15	**Panel discussion on additional solutions / cross cutting issues** ❖ **Cláudio Nóbrega,** *Co-coordinator of the Ecos Machico project on the Municipality of Machico* ❖ **Marco Teles**, *President of the Insular Geographic Association* ❖ **Marcelo Mautone**, *Project manager, SOCLIMPACT* ❖ **Patricia Solinis,** *Project Manager, Technological Center of Marine Sciences (CETECIMA)* ❖ **Carmen Diaz Rodríguez,** *member of the board of directors for Turisfera,Tourism Innovation Cluster of the Canary Islands, SENDA ECOWAY* ❖ *Questions & Answers*
12:15-12:30	13:15-13:30	14:15-14:30	**Conclusions and next steps** ❖ **Nicoletta del Bufalo**, *Managing Director, Ecorys Spain* ❖ **Katherine Fournier-Leroux,** *Policy coordinator, Directorate-General for Regional and Urban Policy, DG REGIO* ❖ **Pedro Sepúlveda,** *Director of Services of the Regional Directorate for the Environment and Climate Change of the Regional Secretariat for the Environment, Natural Resources and Climate Change- Madeira* ❖ **Gustavo Pestana,** *Head of Service, DG Climate Change and Environmental information – Canarias*

Key takeaways and lesson learned

Findings

- Education at all levels is essential to engage local people, tourists, businesses and other stakeholders to actively participate in the transition to climate resilience
- Awareness and knowledge of climate change issues and acceptance of the need to develop climate adaptation and mitigation capacities are already widespread in the region due to its particular vulnerabilities to these issues
- Businesses in the tourism sector are well aware that sustainability and climate resilience are non-optional and can actually improve their competitiveness, with the majority already leading the way on smart and eco-specialisation
- Communication should be tailored to be positive and concrete to local people
- Tourism is recovering well following the COVID-19 pandemic, demonstrating its adaptability

Ways forward

- Mapping of stakeholders at all levels to ensure a holistic overview of their challenges and needs

- Tailored and accessible communications presenting the positive success stories to motivate further engagement
- Better access to funds for SMEs to better engage them in the transition to climate resilience
- Better support to smaller municipalities of fewer resources to participate in the transition and support them in balancing increased tourism activity with a sustainability and climate resilience approach
- Reinforce collaboration and networks between the islands and third countries of the basin to continue valuable exchanges

5.3.9. 3rd Workshop in the Macaronesia Basin: Solutions and mitigation measures regarding biodiversity loss caused by climate change

Wednesday 22nd March 2023

Agenda

Time			Description
GMT	GMT+1	CET	
08:30-09:00	09:30-10:00	10:30-11:00	*Connection time for participants*
09:00-09:05	10:00-10:05	11:00-11:05	**Welcome by the moderator** **Sérgio Barroso,** *Director, CEDRU*
09:05-09:20	10:05-10:20	11:05-11:20	**Opening by the European Commission** • ***Germán Esteban,*** *Deputy Head of the Outermost Regions Unit, DG REGIO* • ***Willem-Jan Goossen,*** *Policy Officer in the unit for Adaptation and Resilience to climate change, DG CLIMA.* • **Leonardo Mazza,** *Policy officer in the Unit for Natural Capital and Ecosystem Health in DG ENV*
09:20-09:25	10:20-10:25	11:20-11:25	**Welcome words by the regional representatives** • **Pedro Sepúlveda,** *Director of Services at the Regional Secretariat of the Environment, Natural Resources and Climate Change (Madeira)*
09:25-09:35	10:25-10:35	11:25-11:35	**Presentation of the thematic context** *Moderator*
09:35-10:35	10:35-11:35	11:35-12:35	**Presentation of relevant initiatives** • **Teresa Ferreira,** *Project Manager, Life Beetles (Azores)* • **Diana Pereira**, *Project Manager, Life IP Azores Natura* • **Sara Freitas**, *Project representative, Life Dunas (Madeira)* • **Andrej Abramic**, *Project Coordinator, PLASMAR (Canarias)* • Questions & Answers
10:35-10:40	11:35-11:40	12:35-12:40	***Break***
10:40-11:20	11:40-12:20	12:40-13:20	**Panel discussion on additional solutions/cross cutting issues** • **Project representatives** • **Marco Teles,** *President of the Insular Geographic Association, Madeira* • **Adriana Rodrigues,** *Co-coordinator of the ECOS Machico Project, Associação Insular de Geografia, (Madeira)*

			• **Luis Silva,** *Professor at the University of the Azores and researcher at CIBIO* • Questions & Answers
11:20-11:30	12:20-12:30	13:20-13:30	**Conclusions**

Key takeaways and lesson learned

Findings

- Archipelagos are usually relevant biodiversity areas, while (as is the case for the Macaronesia basin) tourism has a significant role in insular economies. Touristic activities can place further pressure on ecosystems already stressed under climate change, and the panellists discussed how the negative impacts of tourism on biodiversity can be prevented, as well as how "biodiversity-friendly" tourism can be encouraged.

- Panellists recognised that there had been a huge increase of tourists in natural reserve areas, and since these areas were aimed to protect natural species and habitats, measures had to be taken in order to prevent biodiversity loss as a consequence of higher attendance from tourists.

- The panel discussion also addressed how biodiversity loss had also been receiving increased attention in recent years at the European and global levels. Panellists pointed out noticeable impacts on work/projects and discussed how regional and local governments engage in such processes. In sum, speakers agreed on the increasing role that local governments and society have on biodiversity loss, and much effort has been made in order to raise awareness on this matter.

- Finally, the panel discussion came to an end by addressing how endemic species on islands are often intertwined in local cultures.

Ways forward

- Prior to final remarks, the audience was reminded that there will be two more upcoming workshops in the framework of the Caribbean-Amazonia basin and the South-West Indian Ocean basin. These will take place on March 30th and April 20th respectively. In addition, the final event, which will be taking place in Las Palmas, Canary Islands, will happen on June 13th.

- Germán Esteban reminded the workshop participants that the European Commission is highly committed to support these regions in their efforts of preventing climate change related effects. Additionally, he encouraged the reading of the Outermost Regions strategy released last May, which includes a holistic view of the different challenges faced by Outermost Regions, as well as including climate adaption and biodiversity elements.

- Finally, an overview of the EU LIFE programme projects that intervened during the workshop was provided by Germán Esteban, highlighting the value of the actions and efforts of these projects towards the achievement of climate adaption objectives and goals.

5.3.10. Programme of Exchanges on Climate Change Adaptation in the EU Outermost Regions: Final Event

Programme of Exchanges on Climate Change Adaptation in the EU Outermost Regions: Final Event

13 June 2023

Las Palmas, Gran Canaria, Spain

TOPICS DISCUSSED

1. **Climate change adaptation practices and solutions: Insights from a sample of concrete examples**
2. **Panel Discussion**
3. **Collaboration between the OR on climate adaptation – Lessons learnt and future steps**
4. **Wrap up**

MINUTES

1. Climate change adaptation practices and solutions: Insights from a sample of concrete examples

Multiple OR Project Leaders presented their projects, giving an insight into the practices and solutions with concrete examples:

a. ***LIFE Dunas Project (Madeira) - Sara Freitas****, Senior expert, Institute of Forests and Nature Conservation*

Sara Freitas presented the LIFE Dunas project in Madeira. It aims to build the resilience of Dunes as vital habitats in the face of climate change. The project includes dune restoration in the Calheta area, involving the geomorphological reconstruction with sand recovery and sand drawn from loan banks. Its activities also involve the control of invasive species and the planting of native species that help mitigate and prevent wind erosion by consolidating the dune structure. The project's activities, furthermore, include the promotion of traditional viticulture and the restoration of crotchet walls. There, the project had strong engagement of local community, such as by building a beach walkway. This sustainable development with local community involvement was funded and supported through the LIFE programme.

b. ***PLASMAR & PLASMAR+, (Macaronesian region) - Andrej Abramic,*** *Project coordinator, University Institute ECOAQUA, University Las Palmas de Gran Canaria*

Andrej Abramic presented the PLASMAR & PLASMAR+ project: It supports maritime spatial planning and the development of robust scientific methodologies. Due to geographical specificities of Macaronesia, there is need to develop specific regional competences in climate change issues. This requires a lot of data for which the project developed spatial data infrastructure, including a metadata catalogue with search, view and download services. This was done with a strong

emphasis on interoperability across the Macaronesia region. The project developed the INDIMAR decision support system for suitability zoning of maritime sectors, with a high analytical potential. This also involved finding suitable locations for the maritime sector activities, including offshore wind, aquaculture, mineral extraction, and fisheries, across all the regions of Macaronesia. Their work (**Open access paper introducing offshore wind energy in the sea space: https://www.sciencedirect.com/science/article/pii/S136403212100407X**) was used to apply similar application in Estonia, constituting a concrete application of Outermost Region (OR) good practice elsewhere. Moreover, the project is mapping environmental issues and solutions for each maritime sector using the EU legislation Marine Strategy Framework Directive. This served as basis to identify environmental issues for fisheries, maritime transport, aquaculture and more as well as for solutions to avoid environmental impact, mitigation and monitoring (**Open access paper Environmental impact assessment framework for offshore wind energy developments based on the marine Good Environmental Status https://www.sciencedirect.com/science/article/pii/S0195925522001287).** With PLASMAR+, a cumulative impact assessment analysis is developed using the same method for adding new sectors based on the good environmental status check list. The project showed that offshore wind energy can be compatible with marine protected areas, applied models for what if scenarios combining changes in species abundance due to attraction or repulsion and defining alternative fishing strategies, as well as mapped ecosystem services with PLASMAR+.

c. ***BRIO project (South-West Indian Ocean basin) - Gina Bonne,*** *Project Manager Environmental Sustainability and Climate, Indian Ocean Commission.*

Gina Bonne presented the BRIO Project: The Indian Ocean Commission is an international organisation in which EU countries work with non-EU countries to build capacities and share exchanges. The BRIO project received funding from ERDF with contribution of La Reunion as well as funding from the Seychelles government. It involves both technical partners and institutional partners working together. As most included countries are very small, the models that exist at the international level do not capture the specificities of these islands. This project tries to capture these specificities and look at the long-term impacts of climate change. She brought the example of Meteo France, who developed a model with high resolution regional climate simulations. The project brought people from the islands to La Reunion for capacity building, while the trainers went from La Reunion to Seychelles to teach them there. This built capacity and made use of synergies. Those trained then had the obligation to train their colleagues to propagate the training at the national level. Methodology, the project used a dynamic approach to use physical dynamics of the regional system followed by a statistical approach to correct bias in regional model and make the best use of the data downscaling it from the continental level to the smaller island level. This constitutes an innovative combination of various approaches and models, including the creation of data sets for microclimates and different sectors. The South West Indian Climate Forum regularly meets to discuss the weather for the rainy season, building long-term planning and preparation for extreme weather events. Working together with common tools to common issues. This knowledge transfer – innovative in giving people the power and responsibility – can be replicated in other regions, capitalising on the outcome of the project to further enhance climate services in the region. This includes the use of existing tools and methodology with a regional geoportal in place and a training resource and forum for users as well. The website of the project further provides communication products such as videos.

She highlighted the **key outcomes** of the project, which are long term climate projects and climate services adapted to the region, climatologist trainers, and the SWIOCOF user forum. Additionally, lessons learnt during the project include the importance of partnership and collaboration, as well as the good example of North South and South South participation. Furthermore, the projects showed the potential of building on the competences of existing institutions and tools as well as the advantage of a statistical approach specifically for small territories due to limitations in data models.

d. ***PLANCLIMAC (Canary Islands) - Jesús González Navarro****, Project manager at GESPLAN SA*

Jesús González Navarro presented the PLANCLIMAC project. The project is an initiative of the governments of Azores, Madeira and Canaries, complemented by third country participation, and involving various institutes of agriculture, meteorology and environment, receiving 85% of its

funding from ERDF. The project focuses on the climate emergency with an innovative approach establishing an observatory of climate change in Macaronesia to facilitate exchanges.

This project had three objectives. The first objective was building scientific knowledge and technological capacity for the MAC region as well as proportion tools that facilitate the application of adaptation policies ahead of inherent natural risks of climate change. It established the *Observatorio del cambio climático de la macaronesia*, to act as an inventory of Macaronesia climate change. The project further developed adaptation strategies for the Madeira and Canaries and an adaptation plan for the Azores. The second objective was to improve the knowledge of climate change indicators, including physical chemical, biological and anthropological, that give alerts before natural phenomena occur. Looking at climate and effects on the marine environment, observation network and oceanographic campaigns were developed and realised, followed by an analysis of recent changes in littoral and environmental consequences. Lastly, the third objective of the project was the development of a programme of sensibilisation, divulgation and exchange of experience to build technical capacity in climate adaptation.

2. Panel Discussion

a. ***Question posed by Guadeloupe representative,*** who pointed to great work done by the consortium on data gathering and asked how we can **capitalise on all this knowledge at the global level** through sharing, formative training, information sessions?

Gina Bonne responded that there is the material evidenced in the projects, which highlights the possibility to work with third countries. She pointed to the work with Seychelles as part of the African Islands Commission, which presents an example to capitalise on the information and to propagate it to other African islands and beyond to further countries.

Ywenn de la Torre added that, at the EU level, this programme is such an example, for the need to effectively look for a way to build the foundation of capacities with projects that are purposefully built to such ends. She posed a question to the Commission on the support for more such projects

German Esteban responds to Ywenn de la Torre that there is the possibility to capitalise on the results of the workshops and use the replicability of the results for different contexts within the Caribbean and beyond. He added that, regarding financing, there is a large number of sources, which indeed are competitive. There is also in the cohesion funds for the possibility of Interreg funds 2027 for the creation of projects in the OR. These programmes are a little bit separated by basin, but it is possible to make the same demands within different programmes. He further mentioned LIFE 2030 and Horizon Europe as programmes that offer 95% of funding. He stresses that there are therefore many possibilities and manners for funding, specifically pointing to INTERREG to stimulate synergies beyond this exchange programme.

b. ***Question posed online:*** *Based on experience, what specific adaptation measures are most urgent?*

Ywenn de la Torre responded that we should preserve what we already we have, pointing to nature-based solutions already providing protection and the restoration of these capacities of nature.

Gina Bonne added that, for the islands, the coasts are the most important and require emphasis. This necessitates looking at the infrastructure which is around the coast. There is therefore a need to understand the ocean and coastal erosion.

Jesús González Navarro complemented that coastal regions and coastal erosion in these areas are especially important in Macaronesia.

Sara Freitas stressed the need to look at a whole with the coast and inland, including looking at the soil, how to preserve, and how we can have a global impact.

Andrej Abramic highlighted the vital need for understanding and application of knowledge and replication. This is not a simple task. Writing reports, publishing pages etc. can have limited impact and is not always penetrating but there is a need to merge and integrate knowledge for action.

German Esteban concluded with the need to capitalise on results: In July, they will be launching on demand written requests from the OR to ask for support – which can be broad – about strategical advice on strategies, looking for synergies with EU funds and instruments, or develop project ideas and other ad hoc requests. This tool is aimed precisely to support the OR in advancing as much as possible. It allows common request from different OR to ask for support under this advisory tool, on achieving broad climate adaptation results.

c. ***Question posed online:*** *islands are very much dependent on the local level. Can the tourist industry help with adaptation to coastal erosion, other issues etc.?*

Gina Bonne responded that the Indian ocean is made up of small islands, and they are trying to bring information to other islands. Tourism is one of the main earnings of the small islands, but it should not depend on it and there is an opportunity of diversifying. In the Seychelles, putting in an environmental tax, was being met with criticism by the tourist industry. Government responded that without taking care of the environment no one can enjoy it, locals nor tourists. Hence, there should be greater awareness raising on the need to continue adaptation, as we cannot afford to not educate.

German Esteban closed by stressing that climate adaptation encompasses many sectors and that there is a need to increase coastal resilience and infrastructure of water plants, ports, etc. This requires wide sectoral consideration (e.g., construction sector on training workers, universities giving courses) which can represent a gamechanger when it comes to climate adaptation by including all sectors of economy and contribute to diversification.

3. Collaboration between the OR on climate adaptation – Lessons learnt and future steps

a. ***Gonzalo Piernavieja Izquierdo*** *(R&D&I Director at the Instituto Tecnológico de Canarias)*

Gonzalo Piernavieja Izquierdo, who has been working with OR for over 20 years, is satisfied with seeing advancements on climate change issues. He mentioned that the academic and science side is very strong, but that there is still **missing dissemination amongst broader society**. While young people are engaged, one could focus more on people 40 and older. He also stressed the need to learn from each other. There have been strong political action advancements in the Canaries at the institutional level (e.g. Gran Canaria published an insular climate adaptation strategy, 150 million EUR for 10 years for a population of 1 million people) and at regional level, where a climate change and energy transition law with powerful elements including Climate Action Strategy and a Canary climate action plan passed. He further mentioned funding opportunities, where the next step is the need to improve models that analyse the risks and vulnerabilities from different regions and to maintain their link to the European Commission. On specific programmes by the European Commission, he argued that it is necessary to be even more aware of the potential of the OR and there is a need to account that while 5 million inhabitants make up the OR, **there is a strong potential to extrapolate OR research to other contexts**. Thereby, the analysis of risks is very useful to deploy the knowledge and to help the EU OR and the wider island regions of the world. He brings the example of establishing a programme for strengthening of knowledge and recommends and according increase in funding volume.

German Esteban responded that the programme talks about the Caribbean and Amazona areas, whose topics are applied to a more generic space. Their unit is keenly aware of the OR and, for example in FTAs, the unit tries to take into account the OR specificities for trade and sustainability, such as new clauses in FTAs for third countries to respect and abide rules for the climate as well as labour. To have a strong influence on OR matters, there is a declaration talking about Outer regions (OR), mostly French, which recognises that they are a true asset for the EU. He brounght the example of the region of Caribe, which is an asset and needs to follow concrete actions to strengthen the cooperation with OR. The communication declares that all cohesion needs to facilitate the engagement of regions and tries to put responsibility on the European Commission to, alongside aspects of Member States and OR, encourage implementation of the strategies.

b. ***Basma Ali Mahamoud*** *(Head of the European funds steering department of Mayotte)*

Basma Ali Mahamoud presented a project in Mayotte, that was building capacities with around 20 partners across 9 countries, looking to decarbonise the electric systems of the islands and is planning replication in other EU islands. The project is financed by Horizon Europe with 48 months for the development of intelligent and flexible solutions for renewable energy and electricity distribution. This is done as an integrated system on the island with the development of solar energy and to diversify Mayotte's energy sources. These actions benefit the islands, inter alia by reducing energy bills. She further explained how this also involved an exchange of expertise amongst the islands to reach long-term impacts as well as an analysis of the current energy situation and how adaptation will impact the islands.

c. ***Jean-Paul Fereira*** *(1st vice-president of the territorial community of French Guiana, in charge of sustainable development and energy transition)*

Jean-Paul Fereira emphasised how the projects present the possibility for data exchange with those concerned by the programme as well as opportunities for replication. He highlighted the **specificity of the island context,** which prevents the application of the continental context and pointed to the Amazon that is suffering from human activities and threatening biodiversity. Beyond human activity, he mentioned the impact of recent evolutions of climate change, such as increasingly occurring floodings on the Guianese coast, and brought the example of a small commune that is experiencing strong erosion of the coast. This small commune is now looking for strategies, and the EU provides interesting opportunities for funding around climate change impacts. Mr Fereira further pointed to the beginning of climate refugees and the danger the Amazon is facing, underlining how the issues related to the Amazon are important to the whole planet and connected to many other issues. He concludes that **the network built in this programme must reinforce the capacity for people to fight for these issues**, further stressing the insularity of islands, which require a focus on data exchange to allows for replication, and pointing to the example of the Amazon, where they are working with neighbouring third countries. He argued that there are two actors that need to work together: Member States and OR. France is concerned about climate change impacts and is working with the OR to develop networks for making propositions for the next period. On the question of knowledge, he further argued for a prioritisation according to urgency, linked to the effects of climate change on coasts and accompanied with the urgence for knowledge sharing.

d. ***João Daniel Gomes Luis*** *(Senior Expert at the Regional Directorate for the Environment & Climate Change)*

João Daniel Gomes Luis started by acknowledging that climate change is a global issue but highlighting that the situation for island regions is unique and that they are facing very specific issues that require specific results. He pointed to Macaronesia, where there are common problems and difficulties, but still differences within the region (e.g., Azores has no water issues whereas Madeira and Canaries do). Hence, he argued that **cooperation is fundamental to share experiences**, such as in the field of building resilience and knowledge exchange. This cooperation comes with its own specificities, where he noted that in Macaronesia, the projects involve partners from across the regions that must meet their own needs within the projects, which is why each side develops their own tasks and tries to overcome their own difficulties. Mr Gomes Luis further pointed to the difficulties ahead, including more rain, warmer temperatures, concentrated rain fall, which lead to greater natural risks. To enhance this cooperation, he proposed an Erasmus type mechanism for knowledge sharing across regions with the possibility for experts to move around and visit territories.

4. Wrap up

Germán Esteban *(Deputy Head of Unit for Outermost Regions - REGIO.A1)* thanked the participants in person and online for an interesting day of exchanges and highlighted the power of cooperation and the need to share this amongst the OR. He mentioned that over 100 projects are completed or underway, with a wealth of themes touching all sectors and aiding to diversify economies. Moreover, he stated that there is a communication from the EU adopted to have a plan of action, with DG ECHO and a Memorandum of Understanding to have concrete elements for extreme weather risk management in the future. He invited participants to not only to look to DG REGIO, but also to look at other European funds and possibilities for cooperation with neighbouring third countries. He again underlined the importance of influence in EU politics, and the diversity of financing options with additional opportunities for cooperation within Member States and under different thematic programmes.

Miguel Ángel Pérez Hernández *(Vice-Minister for Climate Change and Ecological Transition of the Government of Canary Islands)* thanked the Commission for carrying out an important project and for those who travelled to attend and those online. He highlighted that we are at a crossroads, where we are facing future climate related risks and those that we are already living in. Underlining that the Canaries has done their homework on the risks with planning and regulatory frameworks, he welcomed having it on paper but reminded everyone that it must still be implemented. Thereby, he stressed the need to implement concrete actions at the grassroots level, pointing to the vital work of the Instituto Tecnológico de Canarias. Stating that the future may appear dark, he argued for looking at how to mitigate this and highlighted how the islands are very small in terms of surface area but still the ones that will be the most affected. While there is a dependency on tourism, there is also a need to diversify and to bridge themes. **This programme is a kaleidoscope of the three countries and shows how to work closely with the EU,** something citizens do not always understand. He closed with stating the need to be ready for the future, which for climate change is already in the present. In doing so, these projects must be part of the change so citizens can understand and embrace the change needed.